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**SEDIMENT/EROSION CONTROL AND
STORM WATER MANAGEMENT PLAN**



Sediment/Erosion Control and Storm Water Management Plan

Construction/Operation Level Design Report Corrective Action Management Unit Grand Calumet River Sediment Remediation Project

**U.S. Steel - Gary Works
Gary, Indiana**

*Prepared for
U.S. Steel Group
Pittsburgh, Pennsylvania*

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LIST OF ATTACHMENTS

Attachment

- 1 - Rule 5
- 2 - Notice of Intent Application
- 3 - Applicable Specifications
- 4 - Inspection Checklist

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1.0 INTRODUCTION

This Erosion/Sediment Control and Storm Water Management Plan (Plan) has been developed in accordance with 327 IAC 15-5 (Rule 5), Indiana Administrative Code. Rule 5, Ind. Adm. Code requires all landowners of construction projects disturbing five or more acres of land to:

- Prepare and submit a complete Notice of Intent (NOI) letter to the Office of Water Management, Permits Section in accordance with 327 IAC 15-3-2 and 327 IAC 15-5-5 within 30 days of land disturbing activities.
- Pay a \$100.00 fee for the NOI letter to the Indiana Department of Environmental Management (IDEM).
- Develop an Erosion/Sediment Control and Storm Water Management Plan in accordance with 327 IAC 15-5-7.
- Provide proof of publication in a newspaper of general circulation in the affected area that notified the public that a construction activity under Rule 5 is to commence.

A copy of Rule 5 is contained in Attachment 1.

The U.S. Steel Gary Works facility is preparing to implement a Sediment Remediation Program along the approximately 5 mile headwaters reach of the Grand Calumet River (GRC). The Sediment Remediation Program of the GRC includes hydraulic dredging, passive dewatering of the dredged sediments in a Corrective Action Management Unit (CAMU), and water treatment. An approximately 36 acre CAMU will be constructed as part of this program. The CAMU will function as both a means of separating the water from the non-native sediments and a permanent repository of the sediments. Consequently this facility will constitute a land disposal facility under the rules and regulations of RCRA. This Erosion Sediment Control and Storm Water Management Plan is being written for the construction of the CAMU on a portion of the U.S. Steel Gary Works facility. Refer to Drawing D34 for location of the CAMU.

A Notice of Intent (NOI) for construction associated with a dredged sediment passive dewatering CAMU on U.S. Steel Gary Works facility will be submitted to the IDEM prior to the commencement of construction activities. A copy of the NOI application is contained in Attachment 2.

Site construction of the CAMU is temporary and is expected to last approximately two years. The CAMU itself will be a permanent facility and U.S. Steel may propose to the USEPA to use excess capacity remaining in the CAMU after the Sediment Remediation Program to dispose of corrective action remediation waste resulting from implementation of Corrective Measures at Gary Works. Thus, U.S. Steel has proposed to construct the CAMU in accordance with the 40 Code of Federal Regulations (CFR 264), Subpart N and

the Indiana Solid Waste Management Permit Regulations for Hazardous Waste Disposal Facilities. Specifically, the construction of the CAMU will meet or exceed siting and design standards provided in 329 IAC 3.1 (IAC, Title 329, 1996). The focus of erosion/sediment control and storm water management for this plan will entail the construction of the CAMU.

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2.0 SITE AND PROJECT DESCRIPTION

2.1 SITE DESCRIPTION

The CAMU site is an undeveloped parcel of land owned by U.S. Steel approximately 54 acres in size. Refer to Drawing D35. The CAMU site is bounded by paved access roads to the north and south, the Former Select Beverage facility to the east, and the ISE facility to the west. Other features include a major rail yard immediately north of the CAMU site, bounded by the southern boundary of the Gary Works facility approximately 2,000 ft to the north, and Interstate I-90 and the GRC approximately 200 ft and 300 ft, respectively, to the south of the CAMU site. U.S. Steel also owns approximately 13 acres of land located east of the Former Select Beverage Facility. This 13 acres will house a project specific wastewater treatment plant for treating liquids, as necessary prior to discharge to the GRC. The total in-place volume of non-native sediments to be dredged from the GCR is currently estimated to be approximately 746,700 cubic yards.

2.2 TOPOGRAPHY AND DRAINAGE

A topographic base map of the property was prepared by photogrammetric methods to identify the physiographic and cultural features. The topographic base map was prepared by HDR Engineering. The base map was then used for planning the CAMU site investigation and design purposes.

Cole Associates, Inc. (now DLZ) of Chesterton, Indiana surveyed the locations and elevations of the existing wells, new wells, and site features. Elevations were measured relative to mean sea level datum with an accuracy of ± 0.1 ft for ground surface elevation, ± 0.01 ft for top of well casing and protective pipe, and ± 1.0 ft for the horizontal location of wells. Locations were surveyed in reference to the Indiana State Plane Coordinate System, 1983 North America Datum.

2.2.1 Topography

The majority of the Gary Works facility and the adjacent area south of the facility are essentially flat. A regional topographic map is shown on Drawing D34. In general, the existing surface elevations range from 600 to 602 ft above mean sea level (MSL). The elevation of the GRC is approximately 582.5 ft (MSL) in the vicinity of the CAMU site.

The major topographic features at the CAMU site are the two former dredge receiving basins; a larger one located to the north, and a smaller one located to the south. The dredge receiving basins are surrounded by perimeter berms ranging from approximately 4 ft to 8 ft in height. The berms have been breached at several locations to permit access to the dredge receiving areas. The topographic variation across the non-bermed areas of the CAMU site is approximately 4 ft, and ranges from an elevation of 596 ft MSL in the north to an elevation of 592 ft MSL in the south. The CAMU site is generally densely wooded and vegetated with thick undergrowth. The ground surface within the berms is gently

undulating. The last known disposal of dredge spoils in the CAMU area occurred in the late 1960s according to Gary Works personnel. Due to the liquid nature of the spoils, the disposal process did not create any significant mounding within the berms. Instead, the spoils tended to fill in depressions and low lying areas within the berms resulting in the relatively flat topography which currently exists.

There are few drainage swales within the bermed areas. The permeable nature of the subsoils allows adequate vertical drainage in most areas. Small areas of wetland vegetation exists within depressions at the northwest corner of the CAMU site. This wetland area will be removed during construction of the CAMU. A wetland mitigation program has been approved by the USACE. The wetland mitigation program is described in the July 1995 report titled "*Compensatory Wetland Mitigation Plan for the Grand Calumet River Dredging Project*" (J.F. New and Associates, 1995).

The CAMU site is not located within the 100 year floodplain as shown on the Flood Insurance Rate Map on Drawing D36. The perimeter and interior berms for the CAMU will be at an elevation of 620 ft MSL and will be approximately 25 ft higher than the existing ground surface. The berms are shown on Drawing D37. These berms will be constructed using the existing dredge spoils and the native granular soil that will be excavated inside the CAMU to achieve the proposed base grades. The perimeter berm will be built with 2 horizontal to 1 vertical (2H:1V) inboard and 3H:1V outboard slopes and the interior berm will be at 2H:1V slopes.

2.2.2 Drainage

Two major surface water features are located within one mile of the proposed CAMU. The GCR is located approximately 300 ft south of the CAMU site. The GCR flows from east to west, parallel to the southern boundary of the proposed CAMU. In the vicinity of the CAMU site, the GCR is approximately 120 ft wide and approximately 5 ft deep. The elevation of the GCR, directly south of the CAMU site, is approximately 582.5 ft MSL. The other surface water feature is Lake Michigan, which is located approximately one mile north of the proposed CAMU. There are no drainage features connecting the proposed CAMU site to Lake Michigan. The Gary Works facility and the railroad lines are located between the CAMU site and Lake Michigan. The elevation of Lake Michigan directly north of the CAMU site is approximately 582 ft MSL.

2.3 SOILS

Based on subsurface investigation conducted by Montgomery Watson in 1996 and 1997, the depositional sequence at the CAMU, beginning at ground surface, consists of urban fill, (past dredge spoils) buried topsoil, unconsolidated sands, lacustrine clay/clay till, and dolomite bedrock. In addition, the location of the CAMU site has been designated as Urban Land (UR) in the *Survey Soil of Lake County, Indiana* by the U.S. Department of Agriculture, July 1972. The *Permit Level Design Report* (Montgomery Watson, 1997) has information regarding the physical characteristics of each soil type.

2.3.1 Urban Fill and Buried Topsoil

The surficial material within the CAMU area is composed mainly of GCR dredge spoils which have been intermixed with native surface soils during the past dredging and placement practices. The existing dredge spoils were classified as sands and silts, and were generally distinguished from the native sands by colored staining. The thickness of these non-native surficial soils at the CAMU site ranges from 0 ft to a maximum of approximately 10 ft near the southeast corner of the southern bermed area. The average thickness of the surficial soils is estimated to be approximately 4 ft.

Buried topsoil or remnants of roots and organic soils were encountered in some boreholes during investigation activities. Most of the topsoil and root material were encountered near the interface between the dredge spoils and the underlying sand unit.

2.3.2 Unconsolidated Sands

The fine-grained sand layer extends from below the dredge spoils to a maximum depth of 53.5 ft below existing ground surface. Borehole logs from the investigation activities indicated the fine-grained sand located just below the dredge spoils become mixed with medium and coarse grained sands with depth. In addition, discrete zones of shell fragments were identified at various depths throughout the sand unit.

2.3.3 Lacustrine Clay/Clay Till

The sand layer is underlain by lacustrine clay/clay till which ranges in thickness from 108.5 ft to 113.5 ft. The depositional origin of the clay is both lacustrine and glacial till. The clay is gray in color and densities range from very soft at the top of the unit to very hard at the base of the unit.

2.3.4 Dolomite Bedrock

Dolomite bedrock was identified at depths ranging from 154 ft to 161.5 ft. The dolomite is Silurian in age. The dolomite exhibited both vertical and horizontal fracturing. Horizontal fractures occurred at the bedding planes. In addition, pyrite and calcite filled vugs, and stylonite seams were identified.

The berm construction will have a total depth of 45 ft consisting of 25 ft below existing ground surface and 20 ft above existing ground surface. As stated above, berm construction will primarily consist of the sand layer. However, the berm slopes will be reinforced using a geosynthetic reinforcing layer between successive layers of the berm. Geosynthetic reinforcing layers will be placed at a minimum of every lift of material placed in berms. The reinforcing layers will extend from the slope face back at varying lengths ranging from 4 ft to 60 ft into the berm depending on their location in the berm. Excavated slopes below grade inside the CAMU will not be reinforced.

2.4 SUBBASE GRADE AND INITIAL SITE DEVELOPMENT

The construction of the CAMU will include the following general activities:

- Clearing and Grubbing
- Vertical Barrier Wall Installation
- Utilities
- Site Dewatering
- Silt Fence Installation
- Perimeter and Interior Berm Construction
- Infiltration Basin Construction
- CAMU Liner Installation
- CAMU Operation (Dredging, Dewatering, and Storage)
- Restoration and Reseeding

2.4.1 Clearing and Grubbing

Initial site clearing will consist of clearing and grubbing standing vegetation along the alignment of the vertical barrier wall, so that construction of the vertical barrier wall can occur, while the remainder of the CAMU property is cleared and grubbed. The purpose of grubbing is to clear a sufficient area for installing silt fence, providing access to the CAMU, constructing new roads and two infiltration basins, and laying piping for dredge carriage water, treated water, and sediment slurry. Refer to Drawing D37.

2.4.2 Vertical Barrier Wall Installation

A vertical barrier wall will be installed around the perimeter of the CAMU. The vertical barrier wall will consist of a conventional soil-bentonite wall that will be approximately 2 ft wide. The barrier wall will extend from the existing ground surface to the top of the clay layer, approximately 50 ft below the existing ground surface. The barrier wall will be installed to aid in dewatering of the CAMU site for construction.

2.4.3 Utilities

Site utilities have been identified and are shown on Drawing D37. The utilities within the CAMU property and along the proposed discharge pipeline were staked by the utility

companies in November and December 1999. The following utilities are in the vicinity of the CAMU or associated discharge piping.

- PraxAir - A high pressure oxygen line runs along the eastern portion of the northern limits of the CAMU, and continues west along the north property line. PraxAir also has a cathodic protection station located approximately 250 ft south of the existing north roadway, along the western property line.
- Ameritech - A fiber-optic telephone line runs along the northern limits of the CAMU, south of the existing north roadway.
- Amoco Oil - A oil pipe line runs north of the existing north roadway. This utility will not be affected by the proposed construction.
- Water and Sanitary Sewer - A water line and sanitary sewer run down the center of the existing south public roadway. This utility will not be affected by the proposed construction.
- Electrical - An overhead high voltage electric transmission line and support towers are located south of the CAMU, between the south roadway and the Indiana Tollway.

All existing utility locations will be undisturbed. A minimum set-back with the PraxAir line, along the north access road was agreed upon with PraxAir (see Appendix A of the COLDR, Montgomery Watson 2000). The outboard toe of slope of the perimeter berm is a minimum of 10 ft, from the surveyed in PraxAir lines. By maintaining this minimum set-back with PraxAir lines a minimum set-back from the Ameritech fiber optic line was also maintained.

It will be necessary to cross both the PraxAir line and the Ameritech fiber optics line with the dewatering conveyance system pipe, at several locations. The discharge pipe to Outfall 032 will also cross these two utilities. The emergency overflow pipe from the two infiltration basins will cross the water and sanitary sewer in the south public roadway. Details of the utility crossing will developed by working with the affected utilities, prior to construction.

2.4.4 Site Dewatering

In order to construct the CAMU the water table will be lowered approximately 22 ft. Dewatering will occur by using vertical extraction wells and conveyance piping to convey the groundwater to the northeast corner of the CAMU area and then on to Outfall 032 for discharge into the GCR. The dewatering will occur within the vertical barrier wall.

2.4.5 Silt Fence Installation

Prior to excavating and grading, and as soon as possible after clearing and grubbing, silt fence will be installed around the work areas as shown on Drawing D37. Drawing D38 shows details for the silt fence design.

2.4.6 Perimeter and Interior Berm Construction

The perimeter and interior berms for the CAMU will be at an elevation of 620 ft MSL and will be approximately 25 ft higher than the existing ground surface. The berms are shown on Drawing D37. These berms will be constructed using the existing dredge spoils and the native granular soil that will be excavated inside the CAMU to achieve the proposed base grades. The perimeter berm will be built with 2H:1V inboard and 3H:1V outboard slopes. The interior berm will be built with 2H:1V slopes.

Based on stability calculations for the berm slopes presented in the COLDR (Montgomery Watson, 2000), the berm slopes will be reinforced using a geosynthetic reinforcing layer between successive layers of the berm. Geosynthetic reinforcing layers will be placed at a minimum of every lift of material placed in berms. The reinforcing layers will extend from the slope face back 4 ft to 60 ft into the berm. Excavated slopes below grade inside the CAMU will not be reinforced. Upon completion of construction activities, exterior berm slopes will be covered with 6 inches of topsoil, erosion control matting, and will be seeded. During construction activities storm water flow inside the bermed area will become part of the dewatering system. The dewatered groundwater is pumped to the groundwater collection manhole (MHGW), which conveys the water via piping to the Outfall 032 located east of the property. Thus, storm water/erosion control is not an issue inside the CAMU.

Storm water control during operation of the CAMU will be limited to the storm water runoff from the perimeter berms' outboard sideslopes only. The storm water flow off the outboard slope of the perimeter berm will be directed to the four corners of the property by grading shallow ditches between the toe of slope and the perimeter access roads.

Access around the CAMU will be provided by four roadways, one on each side of the CAMU, as shown on Drawing D37. The existing public roadway to the south of the site will provide access to the south side of the site. Along both the east and west sides of the CAMU, a 22-ft wide access road will be constructed to provide for two-way traffic. The existing roadway north of the CAMU area on U.S. Steel property will provide access to the north of the site. Access to the top of the CAMU berms will be from four road ramps as shown on Drawing D38. These road ramps will be constructed at a maximum 10% slope to allow for truck access. All perimeter roadways and road ramps will be unpaved and proper dust control measures will be taken during construction and operation of the CAMU.

2.4.7 Infiltration Basins

Two infiltration basins will be constructed on the CAMU area. One basin will be at the northeast corner of the CAMU area, and the other will be at the southwest corner of the CAMU area. These basins were sized using a 25-year, 6-hour storm event. Calculations for sizing of the infiltration are included in the COLDR (Montgomery Watson, 2000). The infiltration basins will be constructed a minimum of 10 ft deep with 3H:1V sideslopes. Emergency overflow structures and discharge piping for the infiltration basins to handle greater storm events are shown on Drawing D37. The overflow discharge piping will gravity drain to the shallow ditch located south of the southern roadway. From there, the storm water will flow south under the Indiana Tollway through an existing box culvert structure located south of the CAMU's southeast corner. Details of the emergency overflow structures are shown on Drawing D37. The swale ultimately discharges to the GRC approximately 300 ft to the south. Calculations for sizing of the infiltration basins is dependent on final cover. This Plan does not include final cover, thus, calculations have not been included. However, the basins are over designed for construction and operation activities of the CAMU.

In addition, any storm water located on the berm road, at elevation 620 ft, will flow outward from the road and down the berm's outboard slope and into the small ditches at the toe of slope.

Final surfaces of the infiltration basin will be vegetated.

2.4.8 CAMU Operation (Dredging, Dewatering, and Storage)

A hydraulic dredge will deliver a mixture of water and sediment through an aboveground pipeline to the CAMU. The CAMU will allow for passive dewatering of the dredged sediment. The CAMU will be used for permanent storage of the dewatered sediment. Leachate from the passive dewatering operation will be piped to MH01 and MH02, then to the project specific wastewater treatment plant and ultimately discharged via piping to the Outfall 032 which currently exist.

2.4.9 Restoration, and Reseeding

After completion of the CAMU construction and infiltration basins, disturbed ground will be restored and re-seeded.

2.4.10 Final Site Conditions

Permanent storm water management after operation of the CAMU and closure of the CAMU will consist of intermediate swales on the final cover slopes, downslope pipes discharging to manholes, storm water pipe connecting the manholes, and discharge to two infiltration basins. The intermediate swales on the cover slopes will be graded to direct storm water to seven downslope pipes that will be located within the cover system. The downslope pipes will consist of a buried pipe to direct the collected storm water down the

finished slopes to concrete manholes constructed within the perimeter berms. Seven storm manholes will be located on the perimeter berm at proposed locations shown on Drawing D39. The intermediate swales and downslope pipes will be designed when the final cover system for the CAMU is designed. The storm water drainage pipes between manholes were sized using the peak flow for a 25-year storm event. An addendum to this Plan will be developed for final site conditions.

Refer to Attachment 3 for Specifications regarding tasks for construction of the CAMU site and storm water and erosion control measures.

3.0 SITE MAPS

Drawings D34 through D39 depicts areas of the construction site as required by the *Indiana Handbook for Erosion Control in Developing Areas*, by the Division of Soil Conservation, Indiana Department of Natural Resources, October 1992.

- Drawing D34 depicts regional topography and region soils map including the mapping unit name for the area of the CAMU site.
- Drawing D35 depicts existing conditions and the area where the CAMU site will be constructed.
- Drawing D36 depicts the flood plain areas at and around the CAMU site.
- Drawing D37 depicts the site plan construction for the CAMU site including infiltration basins, silt fence location, access roadways, storm water manholes, storm water conveyance piping, emergency storm water overflow and discharge culvert, and swale location off-site for storm water flow during a storm event.
- Drawing D38 depicts details of the silt fence design and the emergency storm water overflow structures and piping conveyance for erosion control during construction and storm water management during operation and final site conditions of the CAMU site.
- Drawing D39 depicts conditions for filling of the CAMU site with dredge spoils.

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4.0 CONTROL MEASURES

The following is a discussion of control measures and best management practices that will be employed during construction and operation activities at the CAMU site for the GCR Sediment Remediation Program.

4.1 SILT FENCE

Silt fence will be placed on the east and west side of the CAMU construction as shown in Drawing D37. If additional drainage pathways are identified during initial construction activities, additional silt fencing will be installed. The silt fence will be inspected weekly and after all rainfall events during construction activities. Excessive sediment deposits will be removed and reused for construction, if possible. Deficiencies identified during the inspections will be corrected in a timely manner. Additional silt fencing will be maintained at the site for repair purposes. Based on the inspections, additional silt fencing may be added, as needed.

4.2 TEMPORARY BERMS

Temporary berms may be constructed at the CAMU construction site to divert flow from adjacent areas. At this time, it is not anticipated that temporary berms will be needed. However, if temporary berms are needed, then berm integrity will be a part of the inspection program.

4.3 CAMU CONSTRUCTION AND OPERATION

During construction of the CAMU, silt fence will be placed around the construction area to divert flow from the construction area. The dewatering system will be one of the first construction activities. Therefore, excess water from a storm event will be taken care of by the dewatering system. However, if ponding occurs, the excess water may be pumped to the infiltration basins or to the groundwater collection manhole (MHGW). Some construction activities will occur in the wetland area. Disturbed wetlands will not be restored, but will be mitigated off-site as described in the "*Compensatory Wetland Mitigation Plan for the Grand Calumet River Dredging Project*" (J.F. New and Associates, 1995).

During Operation of the CAMU site, storm water flow off the outboard slopes of the perimeter berm will be directed to the four corners of the property by grading shallow ditches between the toe of slope and the perimeter access roads and allowed to infiltrate. Additionally, the outboard slopes of the perimeter berm should be revegetated by this time.

4.4 FINAL CAMU CLOSURE

As stated earlier, an addendum to this Plan will be written for final closure of the CAMU site.

4.5 INFILTRATION BASINS

Two infiltration basins will be constructed to handle storm water from final grades of the CAMU site. This Plan does not include final grades. In addition, the infiltration basins will be used for ponded water from the CAMU site during construction and possibly storm water flow from the berm road area during operation of the CAMU. Silt fence will be placed around the infiltration basins until they are vegetated.

4.6 MATERIAL HANDLING

During the passive dewatering of the dredge spoils and water treatment processes, chemicals may be added at certain points. Chemical addition will occur inside the CAMU site during operation. Chemical addition will be from closed containers into vessels or other containers. Chemical containers not in use will be closed or stored under cover to minimize contact with storm water. Container storage and chemical addition areas, as well as process piping, will be included in the site inspection program.

4.7 VEHICLE MAINTENANCE

Existing dredge spoils along with native soils will be used to construct the CAMU. The existing dredge spoils have elevated concentrations of contaminants greater than background levels including polychlorinated biphenyls (PCBs) but not at low risk levels. Caution will be taken to ensure trucks and their tires are cleaned, if necessary before they leave the CAMU construction area. All wash waters from decontamination procedures will be collected, drummed, and disposed of appropriately. All decontamination pads will be included in the site inspection program.

4.8 WASTE DISPOSAL

Waste disposal including decontamination water, constructed pads, etc., will be classified accordingly prior to disposal.

4.9 RESTORATION, AND RESEEDING

Disturbed areas will be restored and reseeded. In addition, caution will be taken during decontamination procedures so that the area does not become impacted.

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5.0 REPORTING AND MONITORING REQUIREMENTS

Project requirements for inspection and monitoring during construction and operations of the CAMU are as follows:

1. Weekly inspections of erosion and sediment controls (silt fence, berms, infiltration basins, process piping, container storage and addition areas, and the loading area).
2. Inspections of erosion and sediment controls within 24 hours after a precipitation event of 0.5 inches or greater which results in runoff during active construction periods.
3. Maintenance of weekly written reports of inspections conducted, including:
 - The date, time, and place of the inspection
 - Name of individual who performed the inspection
 - An assessment of the condition of erosion and sediment controls
 - A description of erosion and sediment control corrective actions and maintenance activities
 - A description of the present phase of construction at site

A copy of the inspection checklist is contained in Attachment 4.

This Plan, subsequent amendments, and any monitoring information will be maintained in a three-ring binder at the site for the life of the project and will be submitted upon request to the IDEM and the IDNR.

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6.0 CONSTRUCTION SCHEDULE

Schedule will be provided prior to commencement of activities.

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RULE 5



Rule 5: STORM WATER RUNOFF ASSOCIATED WITH CONSTRUCTION ACTIVITY

The purpose of 327 IAC 15-5 (Rule 5) is to reduce pollutants, principally sediment as a result of soil erosion, in storm water discharges into surface waters of the state. The requirements of Rule 5 apply to all persons who are involved in construction activity (which includes clearing, grading, excavation and other land disturbing activities) that results in the disturbance of five (5) acres or more of total land area. If the land disturbing activity results in the disturbance of less than five (5) acres of total land area, but is part of a *larger common plan of development or sale* (such as the development of a subdivision or industrial park), it is still subject to storm water permitting.

A "larger common plan of development or sale" is a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan. For example, if a developer buys a 20-acre lot and builds roads, installs pipes and runs electricity with the intention of constructing homes or other structures sometime in the near future, this would be considered a common plan of development or sale. If the land is parceled off or sold, and construction occurs on plots that are less than five acres by separate, independent builders, this activity still would be subject to the storm water permitting requirements.

A separate Notice of Intent is required for each Erosion & Sediment Control Plan submitted. Projects that have multiple sections incorporated into one Erosion & Sediment Control plan may incorporate all of those sections into one NOI. In response to your NOI, you will receive either a Notice of Sufficiency or a Notice of Deficiency. If you receive a Notice of Deficiency, an amended NOI must be submitted to the Indiana Department of Environmental Management before the initiation of land disturbing activities. In accordance with 327 IAC 15-5-6, all information required under 327 IAC 15-3 and 15-5 shall be submitted prior to initiation of land disturbing activity.

Requirements for Compliance with Rule 5:

- Prepare an Erosion & Sediment Control Plan (E/SCP) that contains the elements required in 327 IAC 15-5-7. Submit the Plan to the Soil & Water Conservation District (SWCD) Office in the county where the construction activity will take place, and to any other appropriate state, county, or local soil erosion control authorities. The SWCD will review the Plan and make recommendations or ask for amendments if necessary. Do not send a copy of your E/SCP to IDEM. Required amendments to your E/SCP must be submitted before you may begin earth disturbing activity.
- Prepare and submit a complete Notice of Intent (NOI) letter to the following address: (an NOI form is available from your county SWCD office, or by calling the number below).

Indiana Department of Environmental Management Office of Water Management, Storm Water (Rule 5) Desk P.O. Box 6015 Indianapolis, IN 46206-6015 317/233-1864

Rev. 1/98

- Implement the E/SCP on your construction site. Be sure that the personnel responsible for installing and maintaining the erosion control measures have been trained in erosion control practices.

****Land disturbing activities may begin only after the above requirements have been fulfilled. Any earth disturbance before submission and approval of the E/SCP or submission of a complete NOI is a violation of Rule 5 and is subject to enforcement and penalty under IC 13-30.**

4. Notify IDEM upon completion of earth disturbing activity in accordance with 327 IAC 15-5-11. There is no form for this; a brief, signed narrative will suffice. All construction activity, including home or building construction, must be complete before a notice of termination may be submitted. If you terminate your project's General Permit coverage before your site is finally stabilized, you may be required to file another NOI.

NOTE: If the receiving water for the project is classified as an outstanding state resource or exceptional use water (see Appendix A), *coverage under the general permit is prohibited*; an individual NPDES permit for storm water discharges must be obtained. An individual permit application must be submitted at least 180 days prior to initiation of land disturbing activities. Contact Rule 5 Coordinator at 317/233-1864 for more information or for an application for an individual NPDES permit.

Questions regarding Erosion & Sediment Control Plans or requirements may be directed to your county Soil & Water Conservation District office or to the Indiana Department of Natural Resources (IDNR), Division of Soil Conservation/Urban Conservation Program, 402 West Washington Street, Room W265, Indianapolis, IN 46204, 317/233-3870. Questions regarding Rule 5 requirements may be directed to the Rule 5 Coordinator at 317/233-1864.

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ARTICLE 15. NPDES GENERAL PERMIT RULE PROGRAM

Rule 1. General Provisions

327 IAC 15-1-1 Purpose

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 1. The purpose of this article is to establish NPDES general permit rules for certain classes or categories of point source discharges by prescribing the policies, procedures, and technical criteria to operate and discharge under the requirements of a NPDES general permit rule. Compliance with all requirements of applicable general permit rules may obviate the need for an individual NPDES permit issued under 327 IAC 5. A facility can operate under an individual NPDES permit and one (1) or more applicable general permit rules. (*Water Pollution Control Board; 327 IAC 15-1-1; filed Aug 31, 1992, 5:00 p.m.: 16 IR 15*)

327 IAC 15-1-2 Definitions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3-1.5; IC 13-7-1

Sec. 2. In addition to the definitions contained in IC 13-7-1, IC 13-1-3-1.5, 327 IAC 1, and 327 IAC 5, as amended, the following definitions apply throughout this article:

- (1) "Existing discharge" means any point source discharge of process or storm water which occurs either continuously or intermittently from a property at the time coverage under an individual NPDES permit is being sought.
- (2) "General permit rule boundary" means an area based upon existing geographic or political boundaries indicating the area within which a facility affected by this article is located.
- (3) "Individual NPDES permit" means a NPDES permit issued to one (1) facility which contains requirements specific to that facility.
- (4) "Notice of intent letter" or "NOI" means a written notification indicating a person's intention to comply with the terms of a specified general permit rule in lieu of applying for an individual NPDES permit and includes information as required under 327 IAC 15-3 and the applicable general permit rule.
- (5) "Storm water" means water resulting from rain, melting or melted snow, hail, or sleet.

(*Water Pollution Control Board; 327 IAC 15-1-2; filed Aug 31, 1992, 5:00 p.m.: 16 IR 15*)

327 IAC 15-1-3 Department request for data

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7-1-17

Sec. 3. (a) Any person, as defined at IC 13-7-1-17, subject to this article shall:

- (1) establish and maintain such records;
- (2) make such reports;
- (3) install, use, and maintain such monitoring equipment or methods (including, where appropriate, biomonitoring methods);
- (4) sample such effluents, internal wastestreams where appropriate, or other material; and
- (5) provide such other data, including, but not limited to, raw materials, catalysts, intermediate products, byproducts, production rates, and related process information;

at such locations, at such times, and in such a manner, as the commissioner may reasonably prescribe.

(b) Sampling of internal wastestreams under subsection (a)(4) and the provisions of data under subsection (a)(5) shall not be required by the commissioner unless:

- (1) such data are reasonably expected to facilitate the identification or quantification of pollutants which may be released to the environment from facilities operated by the person to whom the request is made, and the identification or quantification of such pollutants could not reasonably be made by the commissioner in the absence of the requested information; or
- (2) such data are necessary to properly control wastewater treatment processes.

(*Water Pollution Control Board; 327 IAC 15-1-3; filed Aug 31, 1992, 5:00 p.m.: 16 IR 16*)

327 IAC 15-1-4 Enforcement

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 4. This article shall be enforced through the provisions of IC 13-7-10-5, IC 13-7-11, or IC 13-7-12, or any combination thereof, as appropriate. Penalties for violation of this article shall be governed by IC 13-7-13. (*Water Pollution Control Board; 327 IAC 15-1-4; filed Aug 31, 1992, 5:00 p.m.: 16 IR 16*)

Rule 2. Basic NPDES General Permit Rule Requirements

327 IAC 15-2-1 Purpose and scope

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-1-4-1; IC 13-7-1-10

Sec. 1. This rule defines the basic programmatic requirements of the general permit rule program to be administered by the commissioner consistent with NPDES requirements under the Federal Act, as defined at IC 13-1-4-1, IC 13-7-1-10, and 327 IAC 5. (*Water Pollution Control Board; 327 IAC 15-2-1; filed Aug 31, 1992, 5:00 p.m.: 16 IR 16*)

327 IAC 15-2-2 NPDES general permit rule requirements

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 2. (a) The commissioner may regulate the following discharges under NPDES general permit rules:

(1) Point source discharges of storm water associated with industrial activity as defined in 40 CFR 122.26(b)(14) as published in the Federal Register on November 16, 1990.

(2) Such other categories of point sources operating within the state that:

(A) involve the same or substantially similar types of operations;

(B) discharge the same types of wastes;

(C) require the same effluent limitations or operating conditions; and

(D) require the same or similar monitoring requirements.

(b) The commissioner may determine that an individual permit must be obtained under section 9 of this rule. Any person to whom this article applies may avoid compliance with this article by obtaining an individual NPDES permit.

(c) Each general permit rule shall be applicable to persons meeting the criteria of subsection (a) existing within specific boundaries designated by the commissioner in accordance with the following:

(1) A general permit rule boundary shall correspond with existing geographic or political boundaries such as:

(A) designated planning areas under the Federal Act;

(B) regional sewer districts or sewer authorities;

(C) city, county, or state political boundaries;

(D) state highway systems;

(E) standard metropolitan statistical areas;

(F) urbanized areas as defined by the Bureau of Census according to the criteria in 39 FR 15202 (May 1, 1974); or

(G) any other appropriate divisions or combinations of the boundaries in this subdivision which will encompass the sources subject to the general permit rule.

(2) Any designation of any general permit rule boundary is subject to reclassification by the commissioner:

(A) upon revision of a general permit rule;

(B) if individual NPDES permits have been issued to all persons in a category of point sources; or

(C) as necessary to address water quality problems effectively.

(*Water Pollution Control Board; 327 IAC 15-2-2; filed Aug 31, 1992, 5:00 p.m.: 16 IR 16; errata filed Sep 10, 1992, 12:00 p.m.: 16 IR 65*)

327 IAC 15-2-3 NPDES general permit rule applicability requirements

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 3. (a) A general permit rule may regulate all designated categories of point sources for which a general permit rule exists, except:

(1) as provided under section 6 or 9 of this rule or the applicable general permit rule; and

(2) point source discharges meeting the applicability requirements of a general permit rule, who are already subject to individual NPDES permits prior to the effective date of a general permit rule.

(b) Persons excluded from general permit rule regulation solely because they have an existing individual NPDES permit may request to be regulated under a general permit rule and may request that the individual NPDES permit be revoked or modified to remove the point source from the existing permit. Upon revocation or expiration of the individual NPDES permit, the general permit rule shall apply to such point source discharges regulated under this article.

(c) A person that holds an individual NPDES permit may have discharges regulated under an applicable general permit rule if such discharges are not addressed in the individual permit. (*Water Pollution Control Board; 327 IAC 15-2-3; filed Aug 31, 1992, 5:00 p.m.: 16 IR 17*)

327 IAC 15-2-4 Administrative requirement for NPDES general permit rules

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 4. A general permit rule is a permit-by-rule. Therefore, the statutory requirements for administrative agency rulemaking must be satisfied in the development of a general permit rule. (*Water Pollution Control Board; 327 IAC 15-2-4; filed Aug 31, 1992, 5:00 p.m.: 16 IR 17*)

327 IAC 15-2-5 Notice of intent letter

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 5. (a) Any person subject to the requirements of this article shall submit a NOI letter that complies with this section, 327 IAC 15-3, and the additional requirements in any applicable general permit rule.

(b) A NOI letter shall be submitted to the commissioner by the time specified under 327 IAC 15-3 or the time indicated in the applicable general permit rule.

(c) The person responsible for the operation of the facility from which a point source discharge of pollutants and/or storm water occurs must submit a NOI letter. (*Water Pollution Control Board; 327 IAC 15-2-5; filed Aug 31, 1992, 5:00 p.m.: 16 IR 17*)

327 IAC 15-2-6 Exclusions

Authority: IC 13-14-8; IC 13-14-9; IC 13-15-1-2; IC 13-15-2-1; IC 13-18-3

Affected: IC 13-11-2; IC 13-18-4

Sec. 6. An individual NPDES permit issued under 327 IAC 5 is required for a discharge to a receiving stream identified as an outstanding state resource water, an exceptional use water, or an outstanding national resource water as defined under 327 IAC 2-1-2(3), 327 IAC 2-1-11(b), or 327 IAC 2-1-5-4 or which would significantly lower the water quality, as defined under 327 IAC 5-2-11.3(b)(1) of such a water downstream of the point source discharge. (*Water Pollution Control Board; 327 IAC 15-2-6; filed Aug 31, 1992, 5:00 p.m.: 16 IR 17; filed Jan 14, 1997, 12:00 p.m.: 20 IR 1476*)

327 IAC 15-2-7 Effect of general permit rule

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 7. (a) Compliance with a general permit rule constitutes compliance with all applicable standards and limitations of the Federal Act and state law.

(b) Compliance with an applicable general permit rule does not:

(1) convey any property rights of any sort or any exclusive privileges;

(2) authorize any injury to persons or private property or invasion of other private rights or any infringement of federal, state, or local laws or regulations; or

(3) preempt any duty to obtain state or local assent required by law for the discharge or for construction or operation of the facility from which the discharge is made.

(*Water Pollution Control Board; 327 IAC 15-2-7; filed Aug 31, 1992, 5:00 p.m.: 16 IR 17*)

327 IAC 15-2-8 Nontransferability of notification requirements; time limits for individual NPDES permit application

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 4-22-2; IC 13-1-3; IC 13-7

Sec. 8. (a) Compliance with the NOI letter submission requirements under this article may not be transferred. If ownership/operation of a facility is transferred to a new person, that person must submit a NOI letter pursuant to 327 IAC 15-3 or seek coverage under an individual NPDES permit pursuant to 327 IAC 5.

(b) A person who filed a NOI letter under this article and who subsequently was requested by the commissioner to file an application for an individual NPDES permit has one hundred twenty (120) days from the time of the request by the commissioner to file the application. (*Water Pollution Control Board; 327 IAC 15-2-8; filed Aug 31, 1992, 5:00 p.m.: 16 IR 18*)

327 IAC 15-2-9 Special requirements for NPDES general permit rule

Authority: IC 13-14-8; IC 13-14-9; IC 13-15-1-2; IC 13-15-2-1; IC 13-18-3

Affected: IC 4-21.5; IC 13-11-2; IC 13-18-4

Sec. 9. (a) If a general permit rule is amended, all persons regulated by the affected general permit rule must be notified by first class mail of the amendment by the commissioner within sixty (60) days after the effective date of the amended rule. Those persons notified by the commissioner under this subsection shall:

(1) apply for an individual NPDES permit under 327 IAC 5-3 within one hundred twenty (120) days after the effective date of the amended rule; or

(2) submit a NOI letter containing the information required in 327 IAC 15-3-2 and the amended rule within ninety (90) days after the effective date of the amended rule.

(b) The commissioner may require any person either with an existing discharge subject to the requirements of this article or who is proposing a discharge that would otherwise be subject to the requirements of this article to apply for and obtain an individual NPDES permit if one (1) of the six (6) cases listed in this subsection occurs. Interested persons may petition the commissioner to take action under this subsection. Cases where individual NPDES permits may be required include the following:

(1) The applicable requirements contained in this article are not adequate to ensure compliance with:

(A) water quality standards under 327 IAC 2-1 or 327 IAC 2-1.5; or

(B) the provisions that implement water quality standards contained in 327 IAC 5.

(2) The person is not in compliance with the terms and conditions of the general permit rule.

(3) A change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollutants from the point source.

(4) Effluent limitations guidelines that are more stringent than the requirements in the general permit rule are subsequently promulgated for point sources regulated by the general permit rule.

(5) A water quality management plan containing more stringent requirements applicable to such point source is approved.

(6) Circumstances have changed since the activity regulated under this article began so that the discharger is no longer appropriately controlled under the general permit rule, or either a temporary or permanent reduction or elimination of the authorized discharge is necessary.

(c) If, under subsection (b), the commissioner requires an individual NPDES permit, pursuant to 327 IAC 5-3, the commissioner shall notify the person in writing that an individual NPDES permit application is required. This notice shall be issued pursuant to IC 4-21.5 and shall also include the following:

(1) A brief statement of the reasons for this decision.

(2) An application form.

(3) A statement setting a time for the person to file the application.

(4) A statement that on the effective date of the individual NPDES permit, the general permit rule, as it applies to the individual person, shall no longer apply.

The commissioner may grant additional time upon request of the applicant for completion of the application.

(d) An operator, as defined in 327 IAC 15-5-4(7), of a storm water discharge that meets the applicability requirements of the general permit rule and is not covered by an existing individual NPDES permit, must submit an application under 40 CFR 122.26 as published in the Federal Register on November 16, 1990, and 327 IAC 5-3 if the operator seeks to cover the discharge under an individual permit.

(e) On the effective date of an individual NPDES permit that is issued to a person regulated under this article, this article no longer applies to that person.

(f) Persons with a discharge meeting all the applicability criteria of more than one (1) general permit rule shall comply with all applicable general permit rules. (*Water Pollution Control Board; 327 IAC 15-2-9; filed Aug 31, 1992, 5:00 p.m.: 16 IR 18; errata filed Sep 10, 1992, 12:00 p.m.: 16 IR 65; errata, 16 IR 751; filed Jan 14, 1997, 12:00 p.m.: 20 IR 1476*)

327 IAC 15-2-10 Prohibitions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 10. No general permit rule shall be promulgated and issued where the terms and conditions of the permit rule do not comply with the applicable guidelines and requirements of the Federal Act or effective regulations promulgated under the Federal Act, 327 IAC 2, 327 IAC 5, or this article. (*Water Pollution Control Board; 327 IAC 15-2-10; filed Aug 31, 1992, 5:00 p.m.: 16 IR 18*)

Rule 3. NOI Letter Requirements

327 IAC 15-3-1 Purpose

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 1. The purpose of this rule is to establish the requirements and procedures for submitting a NOI letter under a general permit rule. The NOI letter shall be sent to the following address:

Indiana Department of Environmental Management

Office of Water Management

105 South Meridian Street

P.O. Box 6015

Indianapolis, Indiana 46206

Attention: Permits Section, General Permit Desk

(*Water Pollution Control Board; 327 IAC 15-3-1; filed Aug 31, 1992, 5:00 p.m.: 16 IR 19*)

327 IAC 15-3-2 Content requirements of a NOI letter

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 2. The NOI letter shall include the following:

(1) Name, mailing address, and location of the facility for which the notification is submitted.

(2) Standard Industrial Classification (SIC) codes, as defined in 327 IAC 5, up to four (4) digits, that best represent the principal products or activities provided by the facility.

(3) The person's name, address, telephone number, ownership status, and status as federal, state, private, public, or other entity.

(4) The latitude and longitude of the approximate center of the facility to the nearest fifteen (15) seconds, or the nearest quarter section (if the section, township, and range are provided) in which the facility is located. -

(5) The name of receiving water, or, if the discharge is to a municipal separate storm sewer, the name of the municipal operator of the storm sewer and the ultimate receiving water.

(6) A description of how the facility complies with the applicability requirements of the general permit rule.

(7) Any additional NOI letter information required by the applicable general permit rule.

(8) The NOI letter must be signed by a person meeting the signatory requirements in 327 IAC 15-4-3(g).

(*Water Pollution Control Board; 327 IAC 15-3-2; filed Aug 31, 1992, 5:00 p.m.: 16 IR 19; errata filed Sep 10, 1992, 12:00 p.m.: 16 IR 65*)

327 IAC 15-3-3 Deadline for submittal of a NOI letter; additional requirements

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 3. (a) Any person proposing a new discharge that will be subject to a general permit rule, except for construction activity under 327 IAC 15-5, shall submit a NOI letter and additional information as required by the applicable general permit rule at least one hundred eighty (180) days before the date on which the discharge is to commence, unless permission for a later date has been granted by the commissioner or is established in the applicable general permit rule. A construction activity NOI letter shall be submitted in accordance with 327 IAC 15-5-6.

(b) Any person operating coverage under a general permit rule with an existing discharge shall submit a NOI letter within ninety (90) days of the effective date of the applicable general permit rule, unless permission for a later date has been granted by the

commissioner or is established in the applicable general permit rule. (*Water Pollution Control Board; 327 IAC 15-3-3; filed Aug 31, 1992, 5:00 p.m.: 16 IR 19; errata filed Sep 10, 1992, 12:00 p.m.: 16 IR 65; errata, 16 IR 898*)

327 IAC 15-3-4 Procedures for exemption from an individual NPDES permit
Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1
Affected: IC 13-1-3; IC 13-7

Sec. 4. Except as provided for in the applicable general permit rule, the following apply:

(1) A person with an existing NPDES permit will be exempt from the requirement of that permit when he submits the applicable NOI letter and complies with all other applicable requirements of this article.

(2) A person with a new facility to which this article applies must comply with all applicable requirements of this article including the submittal of the appropriate NOI letter.

(*Water Pollution Control Board; 327 IAC 15-3-4; filed Aug 31, 1992, 5:00 p.m.: 16 IR 19*)

Rule 4. Standard Conditions for NPDES General Permit Rules

327 IAC 15-4-1 General conditions
Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1
Affected: IC 13-1-3; IC 13-1-6; IC 13-7-13-3

Sec. 1. (a) The conditions in this section apply to all NPDES general permit rules.

(b) Any violation of this article constitutes a violation of the Federal Act and the Indiana Environmental Management Act and is grounds for enforcement action and/or requirement to obtain an individual NPDES permit.

(c) Under the Indiana Environmental Management Act at IC 13-7-13-3, any person who violates "any rule or standard adopted by one (1) of the boards" is subject to a civil penalty not to exceed twenty-five thousand dollars (\$25,000) per day of such violation. Any person who willfully or negligently violates "any rule or standard adopted by one (1) of the boards" is subject to a fine of not less than two thousand five hundred dollars (\$2,500) nor more than twenty-five thousand dollars (\$25,000) per day of violation, or by imprisonment for not more than one (1) year, or both. If the conviction is for a violation committed after a first conviction of such person under this subsection, punishment shall be a fine of not more than fifty thousand dollars (\$50,000) per day of violation, or by imprisonment for not more than two (2) years, or both. Except as provided in applicable general permit rule conditions on bypassing under section 2(c) of this rule, and upsets under section 2(d) of this rule, nothing in this article shall be construed to relieve persons in violation of it from civil or criminal penalties for noncompliance.

(d) Persons in violation of this article shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from their noncompliance.

(e) Persons regulated by this article shall furnish to the commissioner, within a reasonable time, any information which the commissioner may request to determine whether cause exists for revoking and reapproving or terminating the approval to discharge under this article or to determine compliance with this article. Those persons shall also furnish to the commissioner, upon request, copies of records required to be kept by this article.

(f) Notwithstanding the provisions of 327 IAC 15-2-9, if a toxic effluent standard, prohibition, or sediment, wet weather, or biological criteria (including any schedule of compliance specified in such effluent standard or prohibition) is established under the Federal Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in an applicable general permit rule, the rule shall be modified to conform to the toxic effluent standard or prohibition. The person shall comply with effluent standards or prohibitions established under the Federal Act for toxic pollutants injurious to human health within the time provided in the regulations that establish those standards or prohibitions, even if the rule has not yet been modified to incorporate the requirement.

(g) When cyanide or cyanogen compounds are used in any of the processes at a facility regulated under this article, the person responsible for that facility shall provide approved facilities for the containment of any losses of these compounds in accordance with the requirements under 327 IAC 2-2-1.

(h) Persons regulated by this article shall have all wastewater treatment facilities, if any, under the direct supervision of an operator certified by the commissioner as required under IC 13-1-6 and 327 IAC 8-12.

(i) Nothing in this article shall be construed to relieve anyone from any responsibility, liability, or penalty to which they are or may be subject to under the Federal Act.

(j) The applicability of this article does not convey any property rights of any sort or any exclusive privileges.

(k) The provisions of this article are severable and, if any provision of this article or the application of any provision of this article to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this article

shall not be affected thereby.

(l) Persons regulated by this article shall allow the commissioner, or an authorized representative, (including an authorized contractor or representative of another governmental agency acting as a representative on behalf of the commissioner), at reasonable times, and in a manner to minimize disruption of the business, upon the presentation of credentials and such other documents as may be required by law, to:

- (1) enter upon the premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this article;
- (2) have access to and copy, at reasonable times, any records that must be kept under the conditions of this article;
- (3) inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this article; and
- (4) sample or monitor, at reasonable times, for the purposes of assuring compliance with the applicable general permit rule conditions or as otherwise authorized by the Federal Act, any substances or parameters at any location.

(m) Persons regulated by this article shall not construct, install, or modify any water pollution control facility without a valid construction permit issued by the Indiana department of environmental management under 327 IAC 3-2. (*Water Pollution Control Board; 327 IAC 15-4-1; filed Aug 31, 1992, 5:00 p.m.: 16 IR 19; errata filed Sep 10, 1992, 12:00 p.m.: 16 IR 65; errata, 16 IR 751; errata, 16 IR 898*)

327 IAC 15-4-2 Management requirements

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 2. (a) Persons regulated by this article shall, at all times, maintain in good working order and efficiently operate all facilities and systems (and related appurtenances) for collection and treatment which are installed or used by the person and which are necessary for achieving compliance with the terms and conditions of this article.

(b) The following definitions, with regard to bypass of treatment facilities, apply throughout this rule:

- (1) "Bypass" means the intentional diversion of a wastestream from any portion of a treatment facility normally utilized for treatment of the wastestream.
- (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production at the facility.

(c) Bypass which causes, or is likely to cause, applicable effluent limitations to be exceeded is prohibited unless the following conditions are met:

- (1) Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage.
- (2) There are no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal period of equipment downtime.
- (3) The person submits notice of an unanticipated bypass to the commissioner within twenty-four (24) hours of becoming aware of the bypass. (If this information is provided orally, a written submission must be provided within five (5) days.) Where the person knows, or should have known, in advance of the need for a bypass, this prior notification shall be submitted for approval to the commissioner, if possible, at least ten (10) days before the date of the bypass.

An anticipated bypass which meets the criteria under this subsection may be allowed under conditions determined to be necessary by the commissioner to minimize any adverse effects.

(d) With regard to upset conditions, as used in this rule, "upset" means an exceptional incident in which there is unintentional and temporary noncompliance with the requirements of the applicable general permit rule because of factors beyond the reasonable control of the responsible person. An upset does not include noncompliance to the extent caused by any of the following:

- (1) Operational error.
- (2) Improperly designed treatment facilities.
- (3) Inadequate treatment facilities.
- (4) Lack of preventive maintenance.
- (5) Careless or improper operation.

(e) An upset shall constitute an affirmative defense to an action brought for noncompliance with such effluent limitations if the requirements under subsection (d) are met.

(f) A person regulated under this article who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, the following:

- (1) An upset occurred and the regulated person has identified the specific cause of the upset, if possible.
- (2) The facility was, at the time being operated, in compliance with proper operation and maintenance procedures.
- (3) The regulated person complied with any remedial measures required under section 1(d) of this rule.
- (g) Solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of waters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters and to be in compliance with all Indiana statutes and rules relative to liquid and/or solid waste disposal. (*Water Pollution Control Board; 327 IAC 15-4-2; filed Aug 31, 1992, 5:00 p.m.: 16 IR 21*)

327 IAC 15-4-3 Reporting requirements

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7-13-3; IC 35-50-3-3

Sec. 3. (a) Any change in the information submitted in the NOI letter should be reported as soon as practicable to the commissioner. Changes which are reasonably expected to alter the characteristics of the discharge regulated under a general permit rule must be reported prior to the change. Following such notice, the commissioner may request the person to submit an application for an individual NPDES permit.

(b) Monitoring results shall be reported at the intervals and in the form specified in the appropriate general permit rule.

(c) The following are requirements for twenty-four (24) hour reporting:

(1) Persons regulated by this article shall orally report information to the office of enforcement at (317) 232-8603 on the following types of noncompliance within one (1) business day from the time the person becomes aware of such noncompliance:

(A) Any unanticipated bypass which exceeds any effluent limitation in the applicable general permit rule.

(B) Violation of a maximum daily discharge limitation for any of the pollutants listed by the commissioner in the rule to be reported within one (1) business day.

(C) Any noncompliance which may pose a significant danger to human health or the environment.

(2) A written submission shall also be provided to the office of enforcement within five (5) business days of the time the person becomes aware of the circumstances. The written submission shall contain the following:

(A) A description of the noncompliance and its cause.

(B) The period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue.

(C) Steps taken or planned to reduce and eliminate the noncompliance and prevent its recurrence.

The commissioner may waive the written report on a case-by-case basis if the oral report has been received within one (1) business day.

(d) Persons regulated under this article shall report any instance of noncompliance not reported under subsection (c) at the time the pertinent discharge monitoring report is submitted. The report shall contain the information specified under subsection (c)(2).

(e) Where the person becomes aware that he failed to submit any relevant facts, or submitted incorrect information in a NOI letter, or in any report to the commissioner, the person shall promptly submit such facts or corrected information.

(f) Persons regulated under this article shall notify the commissioner as soon as they know, or have reason to believe, the following:

(1) That any activity has occurred, or will occur, which would result in the discharge of any pollutant identified as toxic, under the Federal Act which is not limited in the applicable general permit rule, if that discharge will exceed the highest of the following notification levels:

(A) One hundred (100) micrograms per liter.

(B) Two hundred (200) micrograms per liter for acrolein and acrylonitrile; five hundred (500) micrograms per liter for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and one (1) milligram per liter for antimony.

(C) A level established elsewhere in the rule by the commissioner.

(2) That it has begun, or expects to begin, to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the NOI letter.

(g) Signatory requirements shall be as follows:

(1) All reports required by this article and other information requested by the commissioner shall be signed by a person described as follows, or by a duly authorized representative of that person:

(A) For a corporation, by a responsible corporate officer. As used in this section, "responsible corporate officer" means:

(i) a president, secretary, treasurer, any vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the

corporation; or

(ii) the manager of one (1) or more manufacturing, production, or operating facilities employing more than two hundred fifty (250) persons or having gross annual sales or expenditures exceeding twenty-five million dollars (\$25,000,000) (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(B) For a partnership or sole proprietorship, by a general partner or the proprietor, respectively.

(C) For a municipality, state, federal, or other public agency or political subdivision thereof, by either a principal executive officer or ranking elected official.

(2) A person is a duly authorized representative only if:

(A) the authorization is made in writing by a person described under subdivision (1);

(B) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility (a duly authorized representative may thus be either a named individual or any individual occupying a named position); and

(C) the written authorization is submitted to the commissioner.

(3) Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

(h) Except for data determined to be confidential under 327 IAC 12, all reports prepared in accordance with the terms of the applicable general permit rule shall be available for public inspection at the offices of the Indiana department of environmental management and the U.S. Environmental Protection Agency Regional Administrator. As required by the Federal Act, information contained in the NOI letter and effluent data shall not be considered confidential.

(i) The Indiana Environmental Management Act at IC 13-7-13-3(b) provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under the applicable general permit rule, including monitoring reports or reports of compliance or noncompliance, shall, upon conviction, be punished by a fine of not more than ten thousand dollars (\$10,000) per violation, or by imprisonment for not more than six (6) months per violation, or by both. The Federal Act, as well as IC 13-7-13-3 and IC 35-50-3-3, provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this article shall, upon conviction, be punished by a fine of not more than ten thousand dollars (\$10,000) per violation, or by imprisonment for not more than one hundred eighty (180) days per violation, or by both. (*Water Pollution Control Board; 327 IAC 15-4-3; filed Aug 31, 1992, 5:00 p.m.: 16 IR 21*)

Rule 5. Storm Water Run-Off Associated with Construction Activity

327 IAC 15-5-1 Purpose

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 1. The purpose of this rule is to reduce pollutants, principally sediment as a result of soil erosion, in storm water discharges into surface waters of the state from sites where construction activity disturbs five (5) acres or more of the site. However, in contemplation of recent federal court decisions, persons with sites greater than one (1) acre but less than five (5) acres are invited to comply with this rule as well. (*Water Pollution Control Board; 327 IAC 15-5-1; filed Aug 31, 1992, 5:00 p.m.: 16 IR 23; errata, 16 IR 898*)

327 IAC 15-5-2 Applicability of general permit rules

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 2. The requirements under this rule apply to all persons who:

(1) do not obtain an individual NPDES permit under 327 IAC 15-2-6;

(2) meet the general permit rule applicability requirements under 327 IAC 15-2-3; and

(3) are involved in construction activity, which includes clearing, grading, excavation, and other land disturbing activities,

except operations that result in the disturbance of less than five (5) acres of total land area and which are not part of a larger common plan of development or sale.

(Water Pollution Control Board; 327 IAC 15-5-2; filed Aug 31, 1992, 5:00 p.m.: 16 IR 23)

327 IAC 15-5-3 General permit rule boundary

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 3. Facilities existing within the boundaries of the state of Indiana affected by this rule are regulated under this rule.

(Water Pollution Control Board; 327 IAC 15-5-3; filed Aug 31, 1992, 5:00 p.m.: 16 IR 23)

327 IAC 15-5-4 Definitions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3-1.5; IC 13-4.1; IC 13-7-1

Sec. 4. In addition to the definitions contained in IC 13-7-1, IC 13-1-3-1.5, 327 IAC 1, 327 IAC 5, and 327 IAC 15-1-2, the following definitions apply throughout this rule:

- (1) "Agricultural land use" means use of land for the production of animal or plant life, including forestry, pasturing or yarding of livestock, and planting, growing, cultivating, and harvesting crops for human or livestock consumption.
- (2) "Erosion" means the detachment and movement of soil, sediment, or rock fragments by water, wind, ice, or gravity.
- (3) "Erosion control measure" means a practice, or a combination of practices, to control erosion and resulting sedimentation and/or off-site damages.
- (4) "Erosion control plan" means a written description and site plan of pertinent information concerning erosion control measures.
- (5) "Land disturbing activity" means any manmade change of the land surface, including removing vegetative cover, excavating, filling, transporting, and grading. In the context of this rule, agricultural land disturbing activities, coal mining activities permitted by the DNR under IC 13-4.1, and active landfills permitted by the Indiana department of environmental management where the permit requires soil erosion control are excluded.
- (6) "Nonagricultural land use" means commercial use of land for the manufacturing and wholesale or retail sale of goods or services, residential or institutional use of land intended primarily to shelter people, highway use of land including lanes, alleys, and streets, and other land uses not included in agricultural land use.
- (7) "Operator" means the person required to submit the NOI letter under this article, and required to comply with the terms of this rule.
- (8) "Site" means the entire area included in the legal description of the land on which land disturbing activity is to be performed.

(Water Pollution Control Board; 327 IAC 15-5-4; filed Aug 31, 1992, 5:00 p.m.: 16 IR 23)

327 IAC 15-5-5 Additional NOI letter requirements

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 5. In addition to the NOI letter requirements under 327 IAC 15-3, the following information must be submitted by the operator with a NOI letter under this rule:

- (1) A brief description of the construction project, including, but not limited to, a statement of the total acreage of the site.
- (2) Estimated timetable for land disturbing activities and installation of erosion control measures.
- (3) Statement of the number of acres to be involved in land disturbing activities.
- (4) A written certification by the operator that:
 - (A) the erosion control measures included in the erosion control plan comply with the requirements under sections 7 and 9 of this rule and that the plan complies with applicable state, county, or local erosion control requirements;
 - (B) the erosion control measures will be implemented in accordance with the plan;
 - (C) verification that an appropriate state, county, or local erosion control authority and the soil and water conservation district office have been sent a copy of the plan for review; and
 - (D) verification that implementation of the erosion control plan will be conducted by personnel trained in erosion control practices.
- (5) Proof of publication in a newspaper of general circulation in the affected area that notified the public that a construction

activity under this rule is to commence.

(*Water Pollution Control Board; 327 IAC 15-5-5; filed Aug 31, 1992, 5:00 p.m.: 16 IR 24; errata filed Sep 10, 1992, 12:00 p.m.: 16 IR 65*)

327 IAC 15-5-6 Deadline for submittal of a NOI letter; additional information

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 6. All information required under 327 IAC 15-3 and section 5 of this rule shall be submitted to the commissioner prior to the initiation of land disturbing activities. (*Water Pollution Control Board; 327 IAC 15-5-6; filed Aug 31, 1992, 5:00 p.m.: 16 IR 24*)

327 IAC 15-5-7 General conditions for construction activity erosion control measures

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 7. (a) The operator shall develop an erosion control plan in accordance with the requirements under this section.

(b) The following requirements shall be met on all sites during the period when active land disturbing activities occur:

(1) Sediment-laden water which otherwise would flow from the site shall be detained by erosion control practices appropriate to minimize sedimentation in the receiving stream. No storm water shall be discharged from the site in a manner causing erosion in the receiving channel at the point of discharge.

(2) Appropriate measures shall be taken by the operator to minimize or eliminate wastes or unused building materials, including, but not limited to, garbage, debris, cleaning wastes, wastewater, and other substances from being carried from a site by run-off. Proper disposal or management of all wastes and unused building materials, appropriate to the nature of the waste or material, is required.

(3) Sediment being tracked from a site onto public or private roadways shall be minimized. This can be accomplished initially by a temporary gravel construction entrance in addition to a well-planned layout of roads, access drives, and parking areas of sufficient width and length, or other appropriate measures.

(4) Public or private roadways shall be kept cleared of accumulated sediment. Bulk clearing of accumulated sediment shall not include flushing the area with water. Cleared sediment shall be returned to the point of likely origin or other suitable location.

(5) All on-site storm drain inlets shall be protected against sedimentation with straw bales, filter fabric, or equivalent barriers meeting accepted design criteria, standards, and specification for that purpose.

(6) The following items apply during the time the construction activity is taking place:

(A) Storm water drainage from adjacent areas that naturally pass through the site shall be controlled by diverting it around disturbed areas. Alternatively, the existing channel must be protected and/or improved to prevent erosion or sedimentation from occurring.

(B) Run-off from a disturbed area shall be controlled by one (1) or more of the following measures:

(i) Except as prevented by inclement weather conditions or other circumstances beyond the control of the operator, appropriate vegetative practices will be initiated within seven (7) days of the last land disturbing activity at the site regulated by this rule. Appropriate vegetative practices include, but are not limited to, seeding, sodding, mulching, covering, or by other equivalent erosion control measures.

(ii) The erosion control plan shall be implemented on disturbed areas within the construction site. The plan shall include erosion control measures as appropriate, such as, but not limited to, the following:

(AA) Sediment detention basins.

(BB) Sediment control practices, such as filter strips, diversions, straw bales, filter fences, inlet protection measures, slope minimization, phased construction, maximizing tree coverage, temporary and permanent seeding of vegetation, mulching, and sodding.

All measures involving erosion control practices shall be designed and installed under the guidance of a qualified professional experienced in erosion control and following the specifications and criteria under this subsection. All other nonengineered erosion control measures involving vegetation should be installed according to accepted specifications and criteria under this subsection.

(c) During the period of construction activity at a site, all erosion control measures necessary to meet the requirements of this rule shall be maintained by the operator.

(d) All erosion control measures required to comply with this rule shall meet the design criteria, standards, and specifications

for erosion control measures established by the department in guidance documents similar to, or as effective as, those outlined in the Indiana Handbook for Erosion Control in Developing Areas from the division of soil conservation, Indiana department of natural resources and the Field Office Technical Guide from the Soil Conservation Service. The erosion control plan shall include, but is not limited to, the following:

- (1) A map of the site in adequate detail to show the site and adjacent areas, including the following:
 - (A) Site boundaries and adjacent lands which accurately portray the site location.
 - (B) Lakes, streams, channels, ditches, wetlands, and other water courses on and adjacent to the site.
 - (C) One hundred (100) year floodplains, floodway fringes, and floodways.
 - (D) Location of the predominant soil types which may be determined by the United States Department of Agriculture, SCS County Soil Survey, or an equivalent publication, or as determined by a certified professional soil scientist.
 - (E) Location and delineation of vegetative cover such as grass, weeds, brush, and trees.
 - (F) Location and approximate dimensions of storm water drainage systems and natural drainage patterns on, and immediately adjacent to, the site.
 - (G) Locations and approximate dimensions of utilities, structures, roads, highways, and paving.
 - (H) Site topography, both existing and planned, at a contour interval appropriate to indicate drainage patterns.
 - (I) Potential areas where point source discharges of storm water may enter ground water, if any.
- (2) A plan of final site conditions on the same scale as the existing site map showing the site changes.
- (3) A site construction plan shall include, but is not limited to, the following:
 - (A) Locations and approximate dimensions of all proposed land disturbing activities.
 - (B) Potential locations of soil stockpiles.
 - (C) Locations and approximate dimensions of all erosion control measures necessary to meet the requirements of this rule.
 - (D) Schedule of the anticipated initiation and completion dates of each land disturbing activity, including the installation of erosion control measures needed to meet the requirements of this rule.
 - (E) Provisions, including a schedule, for maintenance of the erosion control measures during construction.
 - (F) Where feasible, preserve vegetation that exists on the site prior to the initiation of land disturbing activities.

(Water Pollution Control Board; 327 IAC 15-5-7; filed Aug 31, 1992, 5:00 p.m.: 16 IR 24)

327 IAC 15-5-8 Project termination

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 8. (a) The operator shall plan an orderly and timely termination of the land disturbing activities which shall include the following:

- (1) Allowing the installation of utility lines on the site, whenever practicable, prior to final land grading, seeding, and mulching of the site.
- (2) Implementing erosion control measures which are to remain on the site.

(b) The commissioner may, subsequent to termination of a project, inspect the site to evaluate the adequacy of the remaining erosion control measures.

(c) Maintenance of the remaining erosion control measures shall be the responsibility of the occupier of the property after the operator has terminated land disturbing activities. *(Water Pollution Control Board; 327 IAC 15-5-8; filed Aug 31, 1992, 5:00 p.m.: 16 IR 25)*

327 IAC 15-5-9 Standard conditions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 9. The standard conditions for NPDES general permit rules under 327 IAC 15-4 shall apply to this rule. *(Water Pollution Control Board; 327 IAC 15-5-9; filed Aug 31, 1992, 5:00 p.m.: 16 IR 26)*

327 IAC 15-5-10 Inspection and enforcement

Authority: IC 13-13-5-2; IC 13-15-1-2; IC 13-15-2-1; IC 13-18-3-1; IC 13-18-3-2; IC 13-18-3-3; IC 13-18-3-13; IC 13-18-4-1; IC 13-18-4-3

Affected: IC 13-14-10; IC 13-15-7; IC 13-18-3; IC 13-18-4; IC 13-30

Sec. 10. (a) The department or its designated representative may inspect any site involved in land disturbing activities regulated by this rule at reasonable times. The erosion control plan must be readily accessible for review at the time of the inspection.

(b) All persons engaging in land disturbing activity on a site shall be responsible for complying with the soil erosion control plan for that site and the provisions of this rule.

(c) The department shall investigate potential violations of this rule to determine which person may be responsible for the violation. The department shall, if appropriate, consider public records of ownership, building permits issued by local units of government, and other relevant information, which may include site inspections, soil erosion control plans, notices of intent, and other information related to the specific facts and circumstances of the potential violation. Any person causing or contributing to a violation of any provisions of this rule shall be subject to enforcement and penalty under IC 13-14-10, IC 13-15-7, and IC 13-30.

(d) If remaining erosion control measures are not properly maintained by the person occupying or owning the property, the department may pursue enforcement against that person for correction of deficiencies under 327 IAC 15-1-4. (*Water Pollution Control Board; 327 IAC 15-5-10; filed Aug 31, 1992, 5:00 p.m.: 16 IR 26; filed Mar 23, 2000, 4:15 p.m.: 23 IR 1912*)

327 IAC 15-5-11 Notification of completion

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 11. The operator shall notify the commissioner, in writing, upon completion of the construction activity. (*Water Pollution Control Board; 327 IAC 15-5-11; filed Aug 31, 1992, 5:00 p.m.: 16 IR 26*)

Rule 6. Storm Water Discharge Associated with Industrial Activity

327 IAC 15-6-1 Purpose

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 1. The purpose of this rule is to establish requirements for point source discharges of storm water associated with industrial activity. Storm water discharges associated with construction activity are regulated under rule 5 of this article [327 IAC 15-5] only. (*Water Pollution Control Board; 327 IAC 15-6-1; filed Aug 31, 1992, 5:00 p.m.: 16 IR 26*)

327 IAC 15-6-2 Applicability of the industrial activity general permit rule

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 2. The requirements under this rule apply to all persons who:

(1) are not prohibited from regulation under a NPDES general permit rule under 327 IAC 15-2-6;

(2) meet the NPDES general permit rule applicability requirements under 327 IAC 15-2-3; and

(3) have a new or existing point source discharge composed entirely of storm water associated with industrial activity, except for categories, in effect on February 12, 1992, of facilities that have storm water effluent guidelines for at least one (1) of their subcategories. These categories include:

(A) cement manufacturing (40 CFR 411);

(B) feedlots (40 CFR 412);

(C) fertilizer manufacturing (40 CFR 418);

(D) petroleum refining (40 CFR 419);

(E) phosphate manufacturing (40 CFR 422);

(F) steam electric power generation (40 CFR 423);

(G) coal mining (40 CFR 434);

(H) mineral mining and processing (40 CFR 436);

(I) ore mining and dressing (40 CFR 440); and

(J) asphalt (40 CFR 443).

If a facility is classified in one (1) of the subcategories that have storm water effluent guidelines, an individual storm water permit application must be submitted.

(*Water Pollution Control Board; 327 IAC 15-6-2; filed Aug 31, 1992, 5:00 p.m.: 16 IR 26; errata, 16 IR 751*)

327 IAC 15-6-3 General permit rule boundary

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1
Affected: IC 13-1-3-1.5; IC 13-7-1

Sec. 3. Facilities existing within the boundaries of the state of Indiana affected by this rule are regulated under this rule.
(*Water Pollution Control Board; 327 IAC 15-6-3; filed Aug 31, 1992, 5:00 p.m.: 16 IR 26*)

327 IAC 15-6-4 Definitions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1
Affected: IC 13-1-3-1.5; IC 13-7-1; IC 13-7-2-15

Sec. 4. In addition to the definitions contained in IC 13-7-1, IC 13-1-3-1.5, 327 IAC 5, and 327 IAC 15-1-2, the following definitions apply throughout this rule:

(1) "Measurable storm event" means a precipitation event which results in a total measured precipitation accumulation equal to, or greater than, one-tenth (0.1) inch of rainfall.

(2) "Storm water discharge associated with industrial activity" means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under 40 CFR Part 122, in effect on February 12, 1992. For the categories of industries identified in clauses (A) through (I), the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or byproducts used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process wastewaters (as defined at 40 CFR Part 401, in effect on February 12, 1992); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. For the categories of industries identified in clause (J), the term includes only storm water discharges from all the areas (except access roads and rail lines) that are listed in the previous sentence where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, byproducts, or industrial machinery are exposed to storm water. For the purposes of this paragraph, material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, byproduct, or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. The following facility types are considered to be involved in industrial activity:

(A) Facilities subject to storm water effluent limitation guidelines, new source performance standards, or toxic pollutant effluent standards under 40 CFR Subchapter N as referenced in 327 IAC 5-12-3 (except facilities with toxic pollutant effluent standards which are exempted under clause (J)).

(B) Facilities classified under the following SIC codes:

- (i) 24 (lumber and wood products, except 2434-wood kitchen cabinets).
- (ii) 26 (paper and allied products, except 265-paperboard containers and boxes and 267).
- (iii) 28 (chemicals and allied products, except 283-drugs).
- (iv) 29 (petroleum and coal products).
- (v) 311 (leather tanning and finishing).
- (vi) 32 (stone, clay, and glass products, except 323-products of purchased glass).
- (vii) 33 (primary metal industries).
- (viii) 3441 (fabricated structural metal).
- (ix) 373 (ship and boat building and repairing).

(C) Mining operations classified as SIC codes:

- (i) 10 (metal mining);
- (ii) 11 (anthracite mining);
- (iii) 12 (coal mining);
- (iv) 13 (oil and gas extraction); and
- (v) 14 (nonmetallic minerals, except fuels).

(D) Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under Subtitle C of RCRA as defined in IC 13-7-2-15.

(E) Landfills, land application sites, and open dumps that receive, or have received, any industrial wastes (waste

that is received from any of the facilities described under this subdivision) including those that are subject to requirements under Subtitle D of RCRA as defined in IC 13-7-2-15.

(F) Facilities involved in the recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards, including, but not limited to, those classified as SIC codes:

- (i) 5015 (motor vehicles parts, used); and
- (ii) 5093 (scrap and waste materials).

(G) Steam electric power generating facilities, including coal handling sites.

(H) Transportation facilities classified as SIC codes:

- (i) 40 (railroad transportation);
- (ii) 41 (local and interurban passenger transit);
- (iii) 42 (trucking and warehousing, except 4221-25);
- (iv) 43 (United States Postal Service);
- (v) 44 (water transportation);
- (vi) 45 (transportation by air); and
- (vii) 5171 (petroleum bulk stations and terminals);

which have vehicle maintenance, solvent based industrial equipment cleaning, or airport de-icing areas. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), solvent based industrial equipment cleaning operations, airport de-icing operations, or which are otherwise identified under this subsection are associated with industrial activity.

(I) Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of one (1.0) million gallons per day or more, or that are required to have an approved pretreatment program under 40 CFR 403. Not included is farmland, domestic gardens, or land used for sludge management where sludge is beneficially reused, and which is not physically located in the confines of the facility or areas that are in compliance with the Federal Act.

(J) Facilities classified under the following SIC codes:

- (i) 20 (food and kindred products).
- (ii) 21 (tobacco products).
- (iii) 22 (textile mill products).
- (iv) 23 (apparel and other textile products).
- (v) 2434 (wood kitchen cabinets).
- (vi) 25 (furniture and fixtures).
- (vii) 265 (paperboard containers and boxes).
- (viii) 267.
- (ix) 27 (printing and publishing).
- (x) 283 (drugs).
- (xi) 285 (paints, varnishes, lacquers, enamels, and allied products).
- (xii) 30 (rubber and miscellaneous plastic products).
- (xiii) 31 (leather and leather products, except 311).
- (xiv) 323 (products of purchased glass).
- (xv) 34 (fabricated metal products, except 3441).
- (xvi) 35 (industrial machinery and equipment).
- (xvii) 36 (electronic and other electric equipment).
- (xviii) 37 (transportation equipment, except 373).
- (xix) 38 (instruments and related products).
- (xx) 39 (miscellaneous manufacturing industries).
- (xxi) 4221 (farm product warehousing and storage).
- (xxii) 4222 (refrigerated warehousing and storage).
- (xxiii) 4223.
- (xxiv) 4224 (household goods warehousing and storage).
- (xxv) 4225 (general warehousing and storage);

which are not otherwise included under clauses (B) through (I) only need to apply for regulation under this rule when storm water is potentially exposed to industrial activity.

(Water Pollution Control Board; 327 IAC 15-6-4; filed Aug 31, 1992, 5:00 p.m.: 16 IR 27; errata filed Sep 10, 1992, 12:00 p.m.:

16 IR 65; errata, 16 IR 751)

327 IAC 15-6-5 Additional NOI letter requirements

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 5. In addition to the NOI letter requirements under 327 IAC 15-3, the following information must be submitted with the NOI letter under this rule:

- (1) Name of responsible corporate officer and/or written authorization for an alternate person or position to act as the duly authorized representative for that person, if appropriate, who will be responsible for all signatory responsibilities for the facility under 327 IAC 15-4-3(g).
- (2) Identification of the number and location of each point source discharge of storm water associated with industrial activity and the corresponding industrial activity associated with the drainage area of each point source discharge.
- (3) Identification of substantially similar point source discharges of storm water on the site, and, if appropriate, the outfall to be monitored as representative of all such discharge points. Also, explain the rationale used to identify why certain point sources are similar.

(Water Pollution Control Board; 327 IAC 15-6-5; filed Aug 31, 1992, 5:00 p.m.: 16 IR 28)

327 IAC 15-6-6 Deadline for submittal of a NOI letter; additional information

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 6. All information required under 327 IAC 15-3 and section 5 of this rule shall be submitted to the commissioner in accordance with 327 IAC 15-3-3, except, for persons that operate under 327 IAC 15-5 and that are affected by this rule, the NOI letter shall be submitted one hundred eighty (180) days before completion of construction. (Water Pollution Control Board; 327 IAC 15-6-6; filed Aug 31, 1992, 5:00 p.m.: 16 IR 28)

327 IAC 15-6-7 General conditions for storm water discharges associated with industrial activity

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 7. (a) The person regulated under this rule shall develop a storm water pollution prevention plan which:

- (1) identifies potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility;
- (2) describes practices to be used in reducing the potential for pollutants to be exposed to storm water; and
- (3) assures compliance with the terms and conditions of this rule.

(b) For each area of the plant that generates storm water discharges associated with industrial activity with a reasonable potential for containing significant amounts of pollutants, a plan shall contain the following:

- (1) A description of potential pollutant sources as follows:

(A) The plan must provide a description of areas on the site reasonably expected to be sources which add significant amounts of pollutants to storm water discharges such as areas used for the following:

- (i) Loading or unloading of dry bulk materials or liquids.
- (ii) Outdoor storage of raw materials, intermediary products, or final products, or waste products.
- (iii) Outdoor process activities.
- (iv) Dust or particulate generating processes.
- (v) Unauthorized connections or management practices.
- (vi) Waste disposal practices.
- (vii) Areas upon which pesticides are applied.

(B) To provide such a description, the plan shall include, at a minimum, the following items:

- (i) A site map indicating, at a minimum, the following:

- (AA) Each drainage and discharge conveyance and outline of the drainage area of each storm water outfall.
- (BB) Paved areas and buildings within the drainage area of each discharge point.
- (CC) Each past or present area used for outdoor storage or disposal of significant materials.
- (DD) Each existing structural control measure to reduce pollutants in storm water run-off.

- (EE) Materials loading and access areas.
 - (FF) Each hazardous waste treatment, storage, or disposal facility, including each area not required to have a RCRA permit which is used for accumulating hazardous waste as defined in 327 IAC 5-1-2 under 40 CFR 262.34 as adopted in 329 IAC 3-14-3 [329 IAC 3 was repealed filed Jan 24, 1992, 2:00 p.m.: 15 IR 1002.].
 - (GG) Each well where fluids from the facility are injected underground.
 - (HH) Springs and wetlands.
 - (II) Other surface water bodies.
 - (JJ) Soil types.
 - (KK) Existing and proposed underground storage tanks.
 - (LL) Snow dumping sites, if any.
- (ii) An estimate of the area of impervious surfaces, including paved areas and building roofs, relative to the total area drained by each outfall.
 - (iii) A topographic map, or other if a topographic map is unavailable, extending one-fourth (1/4) of a mile beyond the property boundaries of the facility, depicting the facility and each of its intake and discharge structures, springs, other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant in the map area. This item may be included in the site map required under item (i).
 - (iv) A narrative description of the following:
 - (AA) Significant materials that in the three (3) years prior to the submittal of the NOI letter have been treated, stored, or disposed on-site in a manner to allow exposure to storm water.
 - (BB) Method of treatment, storage, or disposal.
 - (CC) Past and present materials management practices employed to minimize contact of these materials with storm water run-off.
 - (DD) Materials loading and access areas.
 - (EE) The location and description of existing structural and nonstructural control measures to reduce pollutants in storm water run-off.
 - (FF) A description of any treatment the storm water receives, including the ultimate disposal of any solid or fluid wastes other than by discharge.
 - (v) A list of significant spills and leaks of toxic pollutants or hazardous substances as defined in 327 IAC 5-1-2 that occurred at the facility within three (3) years prior to the submittal of the NOI letter. Such list shall be updated within ninety (90) days from when a significant spill or leak of toxic pollutants or hazardous substances occurs and shall include a description of the materials released, an estimate of the volume of the release, the location of the release, and a description of any remediation or cleanup measures taken.
 - (vi) For each area of the plant that generates storm water discharges associated with industrial activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow, and an estimate of the types of pollutants which could be present in storm water discharges associated with industrial activity.
 - (vii) A summary of existing sampling data describing pollutants in storm water discharges.
- (2) The facility shall be operated and maintained in such a manner that exposure of storm water to potential sources of significant pollutant material is minimized. To accomplish such an operation and maintenance program, the person shall develop management controls of storm water discharge/run-off appropriate for the facility and implement such controls. The storm water management controls shall include, at a minimum, the following components:
- (A) A risk identification/assessment and material inventory which evaluates the potential for various areas of the plant to contribute pollutants to the storm water discharge by exposing the storm water to industrial activity. Such assessment and inventory shall consider factors such as the following:
 - (i) An inventory of the types of materials handled, the location of material handling activities, and types of material management activities.
 - (ii) Identification of the toxicity of chemicals utilized at the facility as well as the quantity of such chemicals used, produced, or discharged.
 - (iii) A history of significant leaks or spills of pollutants known to have occurred.
 - (B) A preventative maintenance program which includes routine inspection and maintenance of storm water management devices.
 - (C) A spill prevention and response program which identifies areas where potential spills can occur and their

accompanying drainage points, and that minimizes the potential for spills to occur. The program shall include, at a minimum, procedures for the following:

- (i) Proper spill response and clean-up.
 - (ii) Reporting a spill to the appropriate facility personnel and, if appropriate, local/state emergency response personnel.
 - (iii) Routine maintenance and inspection of spill response/cleanup materials and equipment.
 - (D) An exposure reduction assessment which identifies the potential to eliminate/reduce storm water exposure in areas identified above as having a risk of exposing the storm water to significant pollutants and appropriate procedures to accomplish such elimination/reduction.
 - (E) A schedule for implementing procedures as identified under clause (D).
 - (F) Certify that storm water discharges from the site have been evaluated for the presence of nonstorm water.
- (c) General requirements of a storm water pollution prevention plan shall include the following:
- (1) The plan shall be certified by a qualified professional.
 - (2) The plan shall be retained on-site and be available for review by a representative of the commissioner upon request.
 - (3) A schedule shall be included with the plan which allows for compliance with the terms of the plan on or before three hundred sixty-five (365) days after submission of the NOI letter, or, in the case of new facilities, prior to initiation of operation at the facility. The commissioner may grant an extension of this time frame based on a request by the person showing reasonable cause.
 - (4) The person regulated under this rule shall report once per quarter its progress in developing and implementing the plan. Once the plan is completed and implemented, the reports may cease. The reports shall be sent to:

Indiana Department of Environmental Management
Permits Section
Office of Water Management
105 South Meridian Street
P.O. Box 6015
Indianapolis, Indiana 46206-6015

(5) The person regulated under this rule shall amend the plan whenever there is a change in design, construction, operation, or maintenance at the facility, which may have a significant effect on the potential for the discharge of pollutants to surface waters of the state, or upon written notice by the commissioner that the storm water pollution prevention plan proves to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity.

(d) Monitoring and reporting requirements shall be as follows:

(1) Each discharge outfall, or representative discharge outfall, composed entirely of storm water run-off, shall be monitored as follows:

Parameter	Units	Sample Type
Oil and grease	mg/l	grab
CBOD ₅	mg/l	grab and composite
COD	mg/l	grab and composite
TSS	mg/l	grab and composite
TKN	mg/l	grab and composite
T. phosphorous	mg/l	grab and composite
pH	s.u.	grab
Nitrate plus nitrite nitrogen	mg/l	grab and composite

(2) For those facilities subject to Federal Categorical Effluent Guidelines (40 CFR Subchapter N, in effect on February 12, 1992); Sara Title III facilities subject to report releases into the environment of chemicals which are classified as section 313 water priority chemicals used at the plant in the previous reporting year and which are reasonably expected to be in the discharge; or an individual NPDES permit for process discharge, those parameters required under these programs which are not listed in this subsection shall also be monitored and sampled by grab and composite, except cyanide, hexavalent chromium and volatile organic compounds, which shall be sampled by the grab sample method.

(3) Prior to implementation of the storm water pollution prevention plan, the person regulated under this rule shall sample and analyze the discharge from the outfall(s) regulated by this rule. During the second year of regulation under this rule, after implementation of the storm water pollution prevention plan, the person shall sample and analyze the discharge from

the outfall(s) regulated under this rule for two (2) precipitation events. No further physical sampling is required unless the facility is notified to perform additional physical sampling by Indiana department of environmental management. During the third through the fifth year of regulation under this rule, visual inspections of each outfall or representative outfall as identified in the NOI letter shall be performed for two (2) storm events each year with results recorded and reported annually to the permits section. Visual inspections shall report the presence of turbidity, color, foam, solids, floatables, and an oil sheen.

(4) A grab sample shall consist of at least one hundred (100) milliliters collected during the first thirty (30) minutes, or as soon thereafter as practicable, of the discharge. The grab sample shall be analyzed separately from the composite sample. A composite sample shall consist of a flow or time-weighted sample, either by the time interval between each aliquot or by the volume of aliquot proportionate to the discharge flow at the time of sampling or the total discharge flow since collection of the previous aliquot. A composite sample shall be taken during a minimum of the first three (3) hours of a storm event.

(5) There shall be a minimum of three (3) months between reported sampling events.

(6) Samples taken in compliance with the monitoring requirements under subdivision (4) shall be taken at a point representative of the discharge but prior to entry into surface waters of the state of Indiana or a municipal separate storm sewer.

(7) Sampling type for discharges from a retention basin with a minimum twenty-four (24) hour detention capacity, or, for coal mines, ten (10) hour detention, shall be a grab sample for all parameters. Such a grab shall be taken within the first thirty (30) minutes of discharge from the pond after initiation of a storm event.

(8) All samples shall be collected from a discharge resulting from a measurable storm event at least seventy-two (72) hours from the previous measurable storm event and, where feasible, where the duration and total precipitation does not exceed fifty percent (50%) from the average or median precipitation event in the area, as determined by the nearest United States National Weather Service Information Center. Documentation of weather conditions that prevent sampling as described in this subsection must be provided to the commissioner.

(9) The analytical and sampling methods used shall conform to the current version of 40 CFR 136 as referenced in 327 IAC 5-2-13(c)(1).

(10) Samples and measurements taken as required under this subsection shall be representative of the volume and nature of the monitored discharge.

(e) Analysis shall be performed in accordance with 40 CFR 136, in effect on February 12, 1992, for quality assurance and quality control.

(f) Reporting requirements shall be as follows:

(1) All samples shall be reported as a value of concentration. Concentration is defined as the mass of any given material present in a unit volume of liquid. Unless otherwise indicated under this rule, concentration values shall be expressed in milligrams per liter.

(2) For each measurement or sample taken pursuant to the requirements of this rule, the facility shall record the following information:

(A) The exact place, date, and time of sampling.

(B) The person who performed the sampling or measurements.

(C) The dates the analyses were performed.

(D) The person who performed the analyses.

(E) The analytical techniques or methods used.

(F) The results of all required analyses and measurements.

(3) All records and information resulting from the monitoring activities required under this rule, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years. In cases where the original records are kept at another location, a copy of all such records shall be kept at the facility. The three (3) year period shall be extended:

(A) automatically during the course of any unresolved litigation regarding the discharge of pollutants by the facility or regarding promulgated effluent guidelines applicable to the facility; or

(B) as requested by the regional administrator or the Indiana department of environmental management.

(4) The person regulated under this rule shall submit an annual report to the Indiana department of environmental management containing results obtained during the previous year and shall be postmarked no later than the twenty-eighth day of January each year. The regional administrator may request the person to submit monitoring reports to the EPA if it is deemed necessary to assure compliance with the applicable general permit rule.

(5) Persons regulated under this rule who have a discharge regulated under this rule which enters a municipal separate storm sewer shall also submit a copy of the discharge monitoring report required under subsection (d) to the operator of the municipal system in accordance with the requirements under subsection (d).

(6) If the person regulated under this rule monitors any pollutant at the location designated in this section more frequently than required under this rule, using approved analytical methods as specified in this subsection, the results of such monitoring shall be reported as additional information in the annual report. Such increased frequency shall also be indicated in the report.

(Water Pollution Control Board; 327 IAC 15-6-7; filed Aug 31, 1992, 5:00 p.m.: 16 IR 28; errata filed Sep 10, 1992, 12:00 p.m.: 16 IR 65; errata, 16 IR 898)

327 IAC 15-6-8 Standard conditions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 8. In addition to the conditions set forth in this rule, the standard conditions for the NPDES general permit rule under 327 IAC 15-4 shall apply also to this rule. *(Water Pollution Control Board; 327 IAC 15-6-8; filed Aug 31, 1992, 5:00 p.m.: 16 IR 32)*

327 IAC 15-6-9 Inspection and enforcement

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 9. (a) The commissioner and/or designated representative may inspect any facility regulated under this rule at any time. The storm water pollution prevention plan and monitoring records must be available on-site for review by the commissioner.

(b) Any person violating any provision of this rule shall be subject to enforcement and penalty as set forth under 327 IAC 15-1-4. *(Water Pollution Control Board; 327 IAC 15-6-9; filed Aug 31, 1992, 5:00 p.m.: 16 IR 32)*

Rule 7. Facilities Engaged in Mining of Coal, Coal Processing, and Reclamation Activities

327 IAC 15-7-1 Purpose

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 1. The purpose of this rule is to regulate wastewater discharges from surface mining, underground mining, and reclamation projects which utilize sedimentation basin treatment for pit dewatering and surface run-off and to require best management practices for storm water run-off so that the public health, existing water uses, and aquatic biota are protected. *(Water Pollution Control Board; 327 IAC 15-7-1; filed May 25, 1994, 11:00 a.m.: 17 IR 2284)*

327 IAC 15-7-2 Definitions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 2. The following definitions apply throughout this rule:

(1) "1-year, 2-year, and 10-year, 24-hour precipitation event" means the maximum 24-hour precipitation event with a probable recurrence interval of once in one (1), two (2), and ten (10) years, respectively, as defined by the National Weather Service and Technical Paper No. 40, "Rainfall Frequency Atlas of the U.S.", May 1961, or equivalent regional or rainfall probability information developed therefrom.

(2) "4 × yearly sample frequency" means the performance of the associated monitoring once any time during each of the four (4) annual quarters:

(A) January-February-March;

(B) April-May-June;

(C) July-August-September; and

(D) October-November-December.

(3) "Acid or ferruginous mine drainage" means mine drainage which, before any treatment, either has a pH of less than six (6.0) or a total iron concentration equal to or greater than ten (10) milligrams per liter.

(4) "Active mining area" means the area, on and beneath land, used or disturbed in activity related to the extraction, removal, or recovery of coal from its natural deposits. This term excludes coal preparation plants, coal preparation plant associated areas, and post mining areas.

- (5) "Alkaline mine drainage" means mine drainage which, before any treatment, has a pH equal to or greater than six (6.0) and a total iron concentration of less than ten (10) milligrams per liter.
- (6) "Bond release" means the time at which the appropriate regulatory authority returns a reclamation or performance bond based upon its determination that reclamation work (including, in the case of underground mines, mine sealing and abandonment procedures) has been satisfactorily completed.
- (7) "Coal preparation plant" means a facility where coal is subjected to cleaning, concentrating, or other processing or preparation in order to separate coal from its impurities and thereafter is loaded for transit to a consuming facility.
- (8) "Coal preparation plant associated areas" means the coal preparation plant yards, immediate access roads, coal refuse piles, and coal storage piles and facilities.
- (9) "Coal refuse disposal pile" means any coal refuse deposited on the earth and intended as a permanent disposal or long term storage (greater than one hundred eighty (180) days) of such material but does not include coal refuse deposited within the active mining area or coal refuse that is never removed from the active mining area.
- (10) "Concentration" means the mass of any given material present in a unit volume of liquid. Unless otherwise indicated in this rule, concentration values shall be expressed in milligrams per liter (mg/l).
- (11) "Controlled surface mine discharge" means any surface mine drainage that is pumped or siphoned from the active mining area.
- (12) "Dry weather base flow" means the normal base flow coming from an area or treatment facility which is not immediately affected by run-off caused by rainfall. This flow is a result of ground water interference or a build-up of rainwater over a long period of time. Alternate limitations apply when this dry weather flow increases due to a precipitation event and continues until the flow again returns to the dry weather rate.
- (13) "Mine drainage" means any drainage, and any water pumped or siphoned, from an active mining area or a post mining area.
- (14) "ml/l" means milliliters per liter.
- (15) "Post mining area" means either of the following:
- (A) A reclamation area.
 - (B) The underground workings of an underground coal mine after the extraction, removal, or recovery of coal from its natural deposit has ceased and prior to bond release.
- (16) "Precipitation event" means a rainfall, snow melt, or ice melt which causes a discharge or an increase in the volume of a discharge.
- (17) "Reclamation area" means the surface area of a coal mine which has been returned to required contour and on which revegetation (specifically, seeding or planting) work has commenced.
- (18) "Settleable solids" means that matter measured by the volumetric method specified in 40 CFR 434.64, which is: Fill an Imhoff cone to the one (1) liter mark with a thoroughly mixed sample. Allow to settle undisturbed for forty-five (45) minutes. Gently stir along the inside surface of the cone with a stirring rod. Allow to settle undisturbed for fifteen (15) minutes longer. Record the volume of settled material in the cone as milliliters per liter (ml/l). Where a separation of settleable and floating materials occurs, do not include the floating material in the reading. The method detection limit for measuring settleable solids shall be four-tenths (0.4) ml/l.
- (19) "TSS" or "total suspended solids" means the mass of suspended matter in wastewater retained on a standard glass fiber filter after filtration of a well-mixed sample after drying for one (1) hour at one hundred three degrees Celsius (103°C).

(Water Pollution Control Board; 327 IAC 15-7-2; filed May 25, 1994, 11:00 a.m.: 17 IR 2284; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2657)

327 IAC 15-7-3 Applicability

Authority: IC 13-14-8; IC 13-14-9; IC 13-15-1-2; IC 13-15-2-1; IC 13-18-3

Affected: IC 13-11-2; IC 13-18-4

Sec. 3. This rule applies to all persons who:

- (1) meet the NPDES general permit rule applicability requirements under 327 IAC 15-2-3; or
- (2) have an existing point source discharge of wastewater controlled by a valid individual NPDES permit.

(Water Pollution Control Board; 327 IAC 15-7-3; filed May 25, 1994, 11:00 a.m.: 17 IR 2285; filed Jan 14, 1997, 12:00 p.m.: 20 IR 1477)

327 IAC 15-7-4 General permit rule boundary

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 4. Facilities existing within the boundaries of Indiana affected by this rule are regulated under this rule. (*Water Pollution Control Board; 327 IAC 15-7-4; filed May 25, 1994, 11:00 a.m.: 17 IR 2285*)

327 IAC 15-7-5 NOI letter requirements under this rule

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 5. (a) In addition to the NOI letter requirements contained in 327 IAC 15-3, a person regulated under this rule must submit with the NOI letter requirements under this rule the following information:

- (1) The discharge location of each outfall, including each outfall regulated under section 7(b)(6) of this rule and its associated receiving stream.
- (2) An identifying outfall number. The numbering shall start at 001 for the first outfall, 002 for the second outfall, and continue in that manner until all outfalls are numbered. The sequential number assigned to any outfall identified under section 7(b)(6) of this rule shall be preceded by an "S".
- (3) For each numbered outfall, identify the mine drainage status regulated under section 7(a)(1) through 7(a)(4) of this rule. For numbered outfalls regulated under section 7(b)(6) of this rule, identify the outfall as discharging storm water.
- (4) The dry weather base flow value for each numbered outfall regulated under section 7(a)(1) through 7(a)(4) of this rule.
- (5) A topographical map identifying the location of the coal mining operation, the receiving streams, and the location of each numbered outfall.

(b) The NOI letter must also include proof of publication of the following statement in a newspaper of largest circulation in the area of the discharge:

"(Your facility name, address, address of the location of the discharging facility, and the stream(s) receiving the discharge(s)) is submitting a Notice of Intent letter to notify the Indiana Department of Environmental Management of our intent to comply with the requirements under 327 IAC 15-7 to discharge wastewater associated with the mining of coal, coal processing, and/or reclamation activities. Any person aggrieved by this action may appeal in writing to the Technical Secretary of the Water Pollution Control Board for an adjudicatory hearing on the question of whether this facility should operate under this NPDES general permit rule. An appeal must be postmarked no later than fifteen (15) days from the date of this public notice. Such a written request for an adjudicatory hearing must:

- (A) state the name and address of the person making the request;
- (B) identify the interest of the person making the request;
- (C) identify any persons represented by the person making the request;
- (D) state with particularity the reasons for the request;
- (E) state with particularity the issues proposed for consideration at the hearing; and
- (F) state with particularity the reasons why the NPDES general permit rule should not be available to the discharger identified in this notice.

Any such request shall be mailed or delivered to:

Technical Secretary
Water Pollution Control Board
P.O. Box 6167
Indianapolis, Indiana 46206-6167"

(c) Following submittal of a NOI letter to IDEM and publication in the newspaper by the person requesting coverage under subsection (b), IDEM shall do the following:

- (1) Review the NOI for applicability pursuant to section 3 of this rule and for compliance with the requirements of subsection (a).
- (2) List this facility, the NPDES general permit tracking number, and the information contained in this notice in a monthly publication to be distributed by IDEM to all persons who have asked to receive NPDES general permit rule notification. This monthly publication shall be issued by IDEM on the fifteenth day of every month and shall identify all facilities which met both the NOI and newspaper publication requirements in the preceding month. Requests to be placed on the NPDES general permit rule notification list shall be mailed or delivered to the address at 327 IAC 15-3-1. IDEM's monthly publication will also contain the following instructions:

"Any person aggrieved by this action may appeal in writing to the Technical Secretary of the Water Pollution Control Board for an adjudicatory hearing on the question of whether this facility should operate under this NPDES general permit rule. An appeal must be postmarked no later than fifteen (15) days from the publication date of this public notice. Such a written request for an adjudicatory hearing must:

- (A) state the name and address of the person making the request;

- (B) identify the interest of the person making the request;
- (C) identify any persons represented by the person making the request;
- (D) state with particularity the reasons for the request;
- (E) state with particularity the issues proposed for consideration at the hearing; and
- (F) identify the NPDES general permit rule terms and conditions which, in the judgment of the person making the request, would be appropriate to satisfy the requirements of the law governing this NPDES general permit rule. If any person filing such objections desires any part of this NPDES general permit rule to be stayed pending the outcome of the appeal, a specific request for such must be included in the request identifying those parts of the rule to be stayed.

Any such request shall be mailed or delivered to:

Technical Secretary
Water Pollution Control Board
P.O. Box 6167
Indianapolis, Indiana 46206-6167".

(d) An amended NOI letter containing the information required in 327 IAC 15-3 and subsection (a) shall be submitted for active or post mining areas and coal preparation plants and associated areas prior to initiating one (1) of the following events:

- (1) A point source discharge is added or deleted.
- (2) A change is made in mine drainage status to a point source discharge.
- (3) The point source discharge location is changed to a different receiving stream.

(e) A copy of the NOI letter and the amended NOI letter required under this section shall also be sent to the following address:

Indiana Department of Natural Resources
Division of Reclamation
R.R. #2, Box 129
P.O. Box 147
Jasonville, Indiana 47438-0147

(Water Pollution Control Board; 327 IAC 15-7-5; filed May 25, 1994, 11:00 a.m.: 17 IR 2285; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2657)

327 IAC 15-7-6 Deadline for submittal of NOI letter; additional information

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1
Affected: IC 13-1-3; IC 13-7

Sec. 6. (a) For any person operating under an existing individual NPDES permit, that regulates a wastewater discharge affected by this NPDES general permit rule, the information required under 327 IAC 15-3 shall be submitted to the commissioner any time between the effective date of the existing individual NPDES permit and one hundred eighty (180) days prior to the expiration date of the existing individual NPDES permit, unless the commissioner determines that a later date is acceptable. For any person operating under an individual NPDES permit that regulates a wastewater discharge affected by this NPDES general permit rule and that has expired and has been administratively extended, the information required under 327 IAC 15-3 shall be submitted to the commissioner within ninety (90) days of the effective date of this NPDES general permit rule, unless the commissioner determines that a later date is acceptable.

(b) For a person proposing a new discharge, the information required under 327 IAC 15-3 shall be submitted to the commissioner fifteen (15) days before the date on which the discharge is to commence as allowed in 327 IAC 15-3-3. (Water Pollution Control Board; 327 IAC 15-7-6; filed May 25, 1994, 11:00 a.m.: 17 IR 2287)

327 IAC 15-7-7 General conditions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1
Affected: IC 13-1-3; IC 13-7

Sec. 7. (a) A person regulated under this rule is authorized to discharge through the outfalls identified in the NOI letter in accordance with this rule. Such discharges shall be limited and monitored as follows:

(1) Discharges through outfalls identified as active mining areas, coal preparation plants, and/or coal preparation plant associated areas designated as new source undetermined mine drainage status shall be limited and monitored as follows:

Parameter	Daily Minimum	Daily Average	Daily Maximum	Units	Measurement Frequency	Sample Type
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Flow	Å	Report	Report	MGD	2XMonthly	Instantaneous
TSS	Å	35	70	mg/l	2XMonthly	Grab
pH	6.0	Å	9.0	s.u.	2XMonthly	Grab
Total iron	Å	3.0	6.0	mg/l	2XMonthly	Grab
Influent pH	Å	Report	Report	Std.	Monthly	Grab
Influent total iron	Å	Report	Report	mg/l	Monthly	Grab

(2) Discharges through outfalls identified as active mining areas, coal preparation plants, and/or coal preparation plant associated areas designated as new source alkaline mine drainage status shall be limited and monitored as follows:

Parameter	Daily Minimum	Daily Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Å	Report	Report	MGD	2XMonthly	Instantaneous
TSS	Å	35	70	mg/l	2XMonthly	Grab
pH	6.0	Å	9.0	s.u.	2XMonthly	Grab
Total iron	Å	3.0	6.0	mg/l	2XMonthly	Grab

(3) Discharges through outfalls identified as active mining areas, coal preparation plants, and/or coal preparation plant associated areas designated as new source acid mine drainage status shall be limited and monitored as follows:

Parameter	Daily Minimum	Daily Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Å	Report	Report	MGD	Weekly	Instantaneous
TSS	Å	35	70	mg/l	Weekly	Grab
pH	6.0	Å	9.0	s.u.	Weekly	Grab
Total iron	Å	3.0	6.0	mg/l	Weekly	Grab
Total manganese	Å	2.0	4.0	mg/l	Weekly	Grab
Total aluminum	Å	Report	Report	mg/l	Monthly	Grab
Total copper	Å	Report	Report	mg/l	Monthly	Grab
Total zinc	Å	Report	Report	mg/l	Monthly	Grab
Total nickel	Å	Report	Report	mg/l	Monthly	Grab

(4) Discharges through outfalls identified as post mining areas shall be limited and monitored as follows:

Parameter	Daily Minimum	Daily Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Å	Å	Å	Å	4XYearly	Instantaneous
Settleable solids	Å	Report	0.5	ml/l	4XYearly	Grab
pH	6.0	Å	9.0	s.u.	Once every reporting period	Grab

(b) A person regulated under this rule shall comply with the following additional discharge requirements:

(1) The pH of the water contained in any water pollution treatment/control facility cannot be adjusted by the use of anhydrous ammonia. The only approved water treatment additives for pH adjustment are:

- (A) sodium hydroxide;
- (B) hydrated lime;
- (C) calcined (unslaked or quick) lime;
- (D) soda ash;
- (E) lime;
- (F) sodium bicarbonate; or
- (G) other water treatment additive approved by the Indiana department of environmental management.

(2) The discharge shall not cause excessive foam in the receiving waters.

(3) The discharge shall be essentially free of floating and settleable solids.

(4) The discharge shall not contain oil or other substances in amounts sufficient to create a visible film or sheen on the receiving waters.

(5) The discharge shall be free of substances that are in amounts sufficient to be unsightly or deleterious or which produce color, odor, or other conditions in such a degree as to create a nuisance.

(6) For discharges of storm water run-off composed entirely of flows from conveyances used for collecting and conveying

precipitation run-off which are contaminated by contact with overburden, coal product, coal byproduct, or coal waste located on the site and do not otherwise report to a NPDES discharge point regulated under this rule, the permittee shall use best management practices including, but not limited to, secondary sedimentation control structures such as rip rap, straw dikes, check dams, mulch, dugouts, or other measures that reduce overload flow velocity, reduce run-off volume, or trap sediment to control run-off from such areas. Compliance with this subdivision obviates the need to comply with 327 IAC 15-6.

(c) A person regulated under subsection (a)(1) through (a)(3) may choose to apply the following alternate effluent limitations to a discharge when the discharge flow rate exceeds the dry weather base flow based on the precipitation events identified as follows:

(1) If a precipitation event is less than or equal to the 10-year, 24-hour storm event, the following limitations may apply instead of the limitations listed in subsection (a):

(A) pH is limited to the range of six (6.0) to nine (9.0).

(B) Settleable solids are limited to a maximum concentration of five-tenths (0.5) ml/l.

(2) If a precipitation event is greater than the 10-year, 24-hour storm event, only pH is limited to the range of six (6.0) to nine (9.0).

These alternate limits are not applicable to discharges which occur during dry weather base flow.

(d) A person regulated under this rule shall comply with the following sampling requirements:

(1) When possible, grab samples shall be taken two (2) times per month with one (1) sample representative of the dry weather base flow and one (1) sample representative of a precipitation event. In the event that only one (1) discharge event or no discharge occurred during a monthly reporting period, the monthly discharge monitoring report shall so state.

(2) Samples taken in compliance with the monitoring requirements in this section shall be taken at a point representative of the discharge but prior to entry into waters of Indiana.

(3) The analytical and sampling methods used shall conform to the current version of 40 CFR 136 as referenced in 327 IAC 5-2-13(d)(1).

(4) Samples and measurements taken as required in this section shall be representative of the volume and nature of the monitored discharge.

(e) A person regulated under this rule shall comply with the following reporting requirements:

(1) Under subsection (c), for reporting purposes, a person regulated under this rule shall report on the monthly discharge monitoring report all analytical results and identify on an attachment to this report the analytical results that were reported under subsection (c) and state the duration and volume of the precipitation event. Failure to submit the necessary information with the monthly discharge monitoring report will disqualify the discharge from the alternate effluent limitations and may lead to a violation of this rule.

(2) For areas designated as new source undetermined mine drainage status, influent pH and influent total iron are to be monitored for a six (6) month period to determine whether they are present in significant quantities. At the end of this sampling period, a person regulated under this rule may request, in writing, to the permits section at the address listed in 327 IAC 15-3-1, a review of these requirements. Upon review and approval by the Indiana department of environmental management, monitoring for influent pH and influent iron may cease, if appropriate, without public notice or comment.

(3) For areas designated as new source acid mine drainage status, total aluminum, total copper, total zinc, and total nickel are to be monitored for one (1) year to determine whether they are present in significant quantities. At the end of this sampling period, a person regulated under this rule may request, in writing, to the permits section at the address listed in 327 IAC 15-3-1, a review of these requirements. Upon review and approval by the Indiana department of environmental management, monitoring for total aluminum, total copper, total zinc, and total nickel may cease, if appropriate, without public notice or comment.

(4) Monthly discharge monitoring reports shall be submitted to the data management section at the address listed in 327 IAC 15-3-1, containing results obtained during the previous month and shall be postmarked no later than the twenty-eighth day of the month following each completed monitoring period. During a month in which no discharge occurs, the person regulated under this rule shall submit the report stating that no discharge occurred.

(5) For each measurement or sample taken pursuant to the requirements of this rule, the facility shall record the following information:

(A) The exact place, date, and time of sampling.

(B) The person(s) who performed the sampling or measurements.

(C) The dates the analyses were performed.

(D) The person(s) who performed the analyses.

(E) The analytical techniques or methods used.

(F) The results of all required analyses.

(6) Monitoring of any pollutant at the location(s) identified in the NOI letter more frequently than required under this rule, using approved analytical methods, the results of such monitoring shall be included in the calculation and reporting of the

values required in monthly discharge monitoring report. Such increased frequency shall also be indicated in this report.

(7) All records and information resulting from the monitoring activities required under this rule, including all records of analyses performed and calibration and maintenance of instrumentation, shall be retained for a minimum of three (3) years. When the original records are kept at another location, a copy of all such records shall be kept at the facility. The three (3) year period shall be extended:

(A) automatically during the course of any unresolved litigation regarding the discharge of pollutants by the facility or regarding promulgated effluent guidelines applicable to the facility; or

(B) when requested by the regional administrator or the Indiana department of environmental management.

(*Water Pollution Control Board; 327 IAC 15-7-7; filed May 25, 1994, 11:00 a.m.: 17 IR 2287; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2657*)

327 IAC 15-7-8 Standard conditions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 8. In addition to the conditions set forth in this rule, the standard conditions for the NPDES general permit rule under 327 IAC 15-4 shall apply also to this rule. (*Water Pollution Control Board; 327 IAC 15-7-8; filed May 25, 1994, 11:00 a.m.: 17 IR 2289*)

327 IAC 15-7-9 Inspection and enforcement

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 9. (a) In accordance with 327 IAC 5-1-3(c), the commissioner and/or designated representative may inspect any facility regulated under this rule at any time.

(b) Any person violating any provision of this rule shall be subject to enforcement and penalties as set forth under 327 IAC 15-1-4. (*Water Pollution Control Board; 327 IAC 15-7-9; filed May 25, 1994, 11:00 a.m.: 17 IR 2289*)

327 IAC 15-7-10 Duration of coverage

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 10. Coverage under this rule is granted by the commissioner for a period of five (5) years from the date coverage commences. To obtain renewal of coverage under this general permit rule, the information required under 327 IAC 15-3 shall be submitted to the commissioner within ninety (90) days of the termination of coverage under this NPDES general permit rule, unless the commissioner determines that a later date is acceptable. (*Water Pollution Control Board; 327 IAC 15-7-10; filed May 25, 1994, 11:00 a.m.: 17 IR 2289*)

Rule 8. Facilities Discharging Noncontact Cooling Water

327 IAC 15-8-1 Purpose

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 1. The purpose of this rule is to regulate the discharge of once through noncontact cooling water which is free from wastewater generated by manufacturing processes and other types of wastewater discharges so that the public health, existing water uses, and aquatic biota are protected. (*Water Pollution Control Board; 327 IAC 15-8-1; filed May 25, 1994, 11:00 a.m.: 17 IR 2289*)

327 IAC 15-8-2 Definitions

Authority: IC 13-14-8; IC 13-14-9; IC 13-15-1-2; IC 13-15-2-1; IC 13-18-3

Affected: IC 13-11-2; IC 13-18-4

Sec. 2. In addition to the definitions contained in IC 13-11-2, 327 IAC 5, and 327 IAC 15-1-2, the following definitions apply throughout this rule:

(1) "Concentration" means the mass of any given material present in a unit volume of liquid. Unless otherwise indicated

in this rule, concentration values shall be expressed in milligrams per liter (mg/l).

(2) "Once through noncontact cooling water" means cooling water that is:

- (A) used for the sole purpose of removing unwanted heat from a process;
- (B) only makes one (1) pass through a unit that exchanges heat between the process and the cooling water (generally a heat exchanger); and
- (C) does not come into contact with any raw material or manufactured product.

In the context of this rule, the term excludes discharges from steam electric power generation facilities defined under 40 CFR 423.

(3) "Settleable solids" means that matter measured by the volumetric method specified in 40 CFR 434.64, which is as follows:

- (A) Fill an Imhoff cone to the one (1) liter mark with a thoroughly mixed sample.
- (B) Allow to settle undisturbed for forty-five (45) minutes.
- (C) Gently stir along the inside surface of the cone with a stirring rod.
- (D) Allow to settle undisturbed for fifteen (15) minutes longer.
- (E) Record the volume of settled material in the cone as milliliters per liter (ml/l). Where a separation of settleable and floating materials occurs, do not include the floating material in the reading.

The method detection limit for measuring settleable solids shall be four-tenths (0.4) ml/l.

(Water Pollution Control Board; 327 IAC 15-8-2; filed May 25, 1994, 11:00 a.m.: 17 IR 2289; filed Jan 14, 1997, 12:00 p.m.: 20 IR 1477)

327 IAC 15-8-3 Applicability

Authority: IC 13-14-8; IC 13-14-9; IC 13-15-1-2; IC 13-15-2-1; IC 13-18-3

Affected: IC 13-11-2; IC 13-18-4

Sec. 3. This rule applies to all persons who:

- (1) meet the NPDES general permit rule applicability requirements under 327 IAC 15-2-3 or have an existing point source discharge of wastewater controlled by a valid NPDES permit; and
- (2) is not a steam electric power generating station as defined under 40 CFR 423.

(Water Pollution Control Board; 327 IAC 15-8-3; filed May 25, 1994, 11:00 a.m.: 17 IR 2290; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2657; filed Jan 14, 1997, 12:00 p.m.: 20 IR 1477)

327 IAC 15-8-4 General permit rule boundary

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 4. Facilities existing within the boundaries of Indiana affected by this rule are regulated under this rule. (Water Pollution Control Board; 327 IAC 15-8-4; filed May 25, 1994, 11:00 a.m.: 17 IR 2290)

327 IAC 15-8-5 NOI letter requirements under this rule

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 5. (a) In addition to the NOI letter requirements under 327 IAC 15-3, a person regulated under this rule must identify in the NOI letter each point source discharge of noncontact cooling water. This identification of point source discharge shall include the following:

- (1) The discharge location of each outfall and its associated receiving stream.
- (2) The type of wastewater discharged through each outfall.
- (3) An identifying outfall number. The numbering shall start at 001 for the first outfall, 002 for the second outfall, and continue in that manner until all outfalls are numbered.
- (4) A listing of all water treatment additives approved for use by the Indiana department of environmental management and in use at the time of this submittal.

(b) The NOI letter must also contain proof of publication of the following statement in a newspaper of largest circulation in the area of the discharge:

"(Your facility name, address, address of the location of the discharging facility, and the stream(s) receiving the discharge(s)) is submitting a Notice of Intent letter to notify the Indiana Department of Environmental Management of our

intent to comply with the requirements under 327 IAC 15-8 to discharge wastewater associated with noncontact cooling water. Any person aggrieved by this action may appeal in writing to the Technical Secretary of the Water Pollution Control Board for an adjudicatory hearing on the question of whether this facility should operate under this NPDES general permit rule. An appeal must be postmarked no later than fifteen (15) days from the date of this public notice. Such a written request for an adjudicatory hearing must:

- (A) state the name and address of the person making the request;
- (B) identify the interest of the person making the request;
- (C) identify any persons represented by the person making the request;
- (D) state with particularity the reasons for the request;
- (E) state with particularity the issues proposed for consideration at the hearing; and
- (F) state with particularity the reasons why the NPDES general permit rule should not be available to the discharger identified in this notice.

Any such request shall be mailed or delivered to:

Technical Secretary
Water Pollution Control Board
P.O. Box 6167
Indianapolis, Indiana 46206-6167".

(c) Following submittal of a NOI letter to IDEM and publication in the newspaper by the person requesting coverage under subsection (b), IDEM shall do the following:

- (1) Review the NOI for applicability pursuant to section 3 of this rule and for compliance with the requirements of subsection (a).
- (2) List this facility, the NPDES general permit tracking number, and the information contained in this notice in a monthly publication to be distributed by IDEM to all persons who have asked to receive NPDES general permit rule notification. This monthly publication shall be issued by IDEM on the fifteenth day of every month and shall identify all facilities which met both the NOI and newspaper publication requirements in the preceding month.

Requests to be placed on the NPDES general permit rule notification list shall be mailed or delivered to the address at 327 IAC 15-3-1.

(d) IDEM's monthly publication will also contain the following instructions:

"Any person aggrieved by this action may appeal in writing to the Technical Secretary of the Water Pollution Control Board for an adjudicatory hearing on the question of whether this facility should operate under this NPDES general permit rule. An appeal must be postmarked no later than fifteen (15) days from the publication date of this public notice. Such a written request for an adjudicatory hearing must:

- (A) state the name and address of the person making the request;
- (B) identify the interest of the person making the request;
- (C) identify any persons represented by the person making the request;
- (D) state with particularity the reasons for the request;
- (E) state with particularity the issues proposed for consideration at the hearing; and
- (F) identify the NPDES general permit rule terms and conditions which, in the judgment of the person making the request, would be appropriate to satisfy the requirements of the law governing this NPDES general permit rule. If any person filing such objections desires any part of this NPDES general permit rule to be stayed pending the outcome of the appeal, a specific request for such must be included in the request, identifying those parts of the rule to be stayed.

Any such request shall be mailed or delivered to:

Technical Secretary
Water Pollution Control Board
P.O. Box 6167
Indianapolis, Indiana 46206-6167".

(Water Pollution Control Board; 327 IAC 15-8-5; filed May 25, 1994, 11:00 a.m.: 17 IR 2290; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2657)

327 IAC 15-8-6 Deadline for submittal of NOI letter; additional information

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 6. (a) For any person operating under an existing individual NPDES permit, that regulates a wastewater discharge

affected by this NPDES general permit rule, the information required under 327 IAC 15-3 shall be submitted to the commissioner any time between the effective date of the existing individual NPDES permit and one hundred eighty (180) days prior to the expiration date of the existing individual NPDES permit, unless the commissioner determines that a later date is acceptable. For any person operating under an individual NPDES permit that regulates a wastewater discharge affected by this NPDES general permit rule and that has expired and has been administratively extended, the information required under 327 IAC 15-3 shall be submitted to the commissioner within ninety (90) days of the effective date of this NPDES general permit rule, unless the commissioner determines that a later date is acceptable.

(b) For a person proposing a new discharge, the information required under 327 IAC 15-3 shall be submitted to the commissioner fifteen (15) days before the date on which the discharge is to commence as allowed in 327 IAC 15-3-3. (*Water Pollution Control Board; 327 IAC 15-8-6; filed May 25, 1994, 11:00 a.m.: 17 IR 2291*)

327 IAC 15-8-7 General conditions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 7. (a) A person regulated under this rule is authorized to discharge noncontact cooling water through the outfalls identified in the NOI letter in accordance with this rule. Such discharge shall be limited and monitored as follows:

<u>Parameter</u>	<u>Daily</u>	<u>Daily</u>	<u>Monthly</u>	<u>Units</u>	<u>Measurement</u>	<u>Sample Type</u>
	<u>Minimum</u>	<u>Maximum</u>	<u>Average</u>		<u>Frequency</u>	
Flow	Å	Å	Å	Å	2XMonthly	Instantaneous
Oil and grease	Å	Report	Report	mg/l	2XMonthly	Grab
Temperature	Å	Report	Report	°F	2XMonthly	Grab
pH	6.0	9.0	Å	s.u.	2XMonthly	Grab

(b) A person regulated under this rule shall comply with the following additional discharge requirements:

(1) If oil and grease is measured in the effluent in detectable quantities, the source of such discharge is to be investigated and eliminated and the findings submitted to the permits section at the address listed in 327 IAC 15-3-1.

(2) The effluent temperature or mixed receiving stream temperature (when there is receiving stream flow) shall not exceed the maximum limits in the following table more than one percent (1%) of the hours in a twelve (12) month period ending with any month:

	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>
	50	50	60	70	80	90
<u>Maximum</u>						
<u>Temperature (°F)</u>						
	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
	90	90	90	78	70	57

At no time shall the water temperature exceed the maximum limits in the table by more than three degrees Fahrenheit (3°F).

(3) The discharge shall not cause excessive foam in the receiving waters.

(4) The discharge shall be essentially free of floating and settleable solids.

(5) The discharge shall not contain oil or other substances in amounts sufficient to create a visible film or sheen on the receiving waters.

(c) A person regulated under this rule shall comply with the following sampling requirements:

(1) Samples taken in compliance with the monitoring requirements in this section shall be taken at a point representative of the discharge but prior to entry into waters of Indiana.

(2) The analytical and sampling methods used shall conform to the current version of 40 CFR 136 as referenced in 327 IAC 5-2-13(d)(1).

(3) Samples and measurements taken as required in this section shall be representative of the volume and nature of the monitored discharge.

(d) A person regulated under this rule shall comply with the following reporting requirements:

(1) Monthly discharge monitoring reports shall be submitted to the data management section at the address listed in 327 IAC 15-3-1, containing results obtained during the previous month and shall be postmarked no later than the twenty-eighth day of the month following each completed monitoring period. During a month in which no discharge occurs, the person regulated under this rule shall submit the report stating that no discharge occurred.

(2) For each measurement or sample taken pursuant to the requirements of this rule, the facility shall record the following information:

(A) The exact place, date, and time of sampling.

- (B) The person(s) who performed the sampling or measurements.
- (C) The dates the analyses were performed.
- (D) The person(s) who performed the analyses.
- (E) The analytical techniques or methods used.
- (F) The results of all required analyses and measurements.

(3) Monitoring of any pollutant at the location(s) identified in the NOI letter more frequently than required under this rule, using approved analytical methods, the results of such monitoring shall be reported as additional information on a monthly discharge monitoring report. Such increased frequency shall also be indicated.

(4) All records and information resulting from the monitoring activities required under this rule, including all records of analyses performed and calibration and maintenance of instrumentation, shall be retained for a minimum of three (3) years. When the original records are kept at another location, a copy of all such records shall be kept at the facility. The three (3) year period shall be extended:

- (A) automatically during the course of any unresolved litigation regarding the discharge of pollutants by the facility or regarding promulgated effluent guidelines applicable to the facility; or
- (B) when requested by the regional administrator or the Indiana department of environmental management.

(5) Prior approval must be obtained from the Indiana department of environmental management before using any water treatment additive that was not reported in the NOI letter under section 5(a)(4) of this rule. The request for approval shall be submitted, as required in 327 IAC 15-4-3, to the permits section at the address listed in 327 IAC 15-3-1. The request must contain all acute and chronic toxicity data available concerning the additives.

(Water Pollution Control Board; 327 IAC 15-8-7; filed May 25, 1994, 11:00 a.m.: 17 IR 2291)

327 IAC 15-8-8 Standard conditions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 8. In addition to the conditions set forth in this rule, the standard conditions for the NPDES general permit rule under 327 IAC 15-4 shall apply also to this rule. *(Water Pollution Control Board; 327 IAC 15-8-8; filed May 25, 1994, 11:00 a.m.: 17 IR 2292)*

327 IAC 15-8-9 Inspection and enforcement

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 9. (a) The commissioner and/or designated representative may inspect any facility regulated under this rule at any time.

(b) Any person violating any provision of this rule shall be subject to enforcement and penalty as set forth under 327 IAC 15-1-4. *(Water Pollution Control Board; 327 IAC 15-8-9; filed May 25, 1994, 11:00 a.m.: 17 IR 2292)*

327 IAC 15-8-10 Duration of coverage

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 10. Coverage under this rule is granted by the commissioner for a period of five (5) years from the date coverage commences. To obtain renewal of coverage under this general permit rule, the information required under 327 IAC 15-3 shall be submitted to the commissioner within ninety (90) days of the termination of coverage under this NPDES general permit rule, unless the commissioner determines that a later date is acceptable. *(Water Pollution Control Board; 327 IAC 15-8-10; filed May 25, 1994, 11:00 a.m.: 17 IR 2292)*

Rule 9. Wastewater Discharge Associated with Petroleum Products Terminals

327 IAC 15-9-1 Purpose

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 1. The purpose of this rule is to establish discharge requirements for point source discharges for wastewater associated petroleum products terminals so that the public health, existing water uses, and aquatic biota are protected. *(Water Pollution Control*

Board; 327 IAC 15-9-1; filed May 25, 1994, 11:00 a.m.: 17 IR 2292)

327 IAC 15-9-2 Definitions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3-1.5; IC 13-7-1

Sec. 2. In addition to the definitions contained in IC 13-7-1 and IC 13-1-3-1.5 and in 327 IAC 5 and 327 IAC 15-1-2, the following definitions apply throughout this rule:

(1) "Concentration" means the weight of any given material present in a unit volume of liquid. Unless otherwise indicated in this rule, concentration values shall be expressed in milligrams per liter (mg/l).

(2) "Daily maximum concentration" means the daily determination of concentration for any calendar day.

(3) "Monthly average concentration" means the arithmetic average (proportional to flow) of all daily determinations of concentration made during a calendar month. Daily determinations of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during the calendar day.

(4) "Petroleum products terminals" means an area where petroleum products are supplied by pipeline or barge; where petroleum products are stored in aboveground tanks; where petroleum products are transferred to trucks for transport to other locations; or where petroleum products are stored in aboveground tanks and are transferred to trucks for transport to other locations.

(5) "Wastewater discharge associated with petroleum products terminal" means the discharge from any conveyance, used for collecting and conveying wastewater which is directly related to the storage area of the petroleum products terminal.

This includes storm water run-off, tank bottom water, and water used for hydrostatically testing the storage tanks.

(Water Pollution Control Board; 327 IAC 15-9-2; filed May 25, 1994, 11:00 a.m.: 17 IR 2293)

327 IAC 15-9-3 Applicability

Authority: IC 13-14-8; IC 13-14-9; IC 13-15-1-2; IC 13-15-2-1; IC 13-18-3

Affected: IC 13-11-2; IC 13-18-4

Sec. 3. This rule applies to all persons who:

(1) meet the NPDES general permit rule applicability requirements under 327 IAC 15-2-3; or

(2) have an existing point source discharge of treated wastewater controlled by a valid individual NPDES permit.

(Water Pollution Control Board; 327 IAC 15-9-3; filed May 25, 1994, 11:00 a.m.: 17 IR 2293; filed Jan 14, 1997, 12:00 p.m.: 20 IR 1478)

327 IAC 15-9-4 General permit rule boundary

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 4. Facilities existing within the boundaries of Indiana affected by this rule are regulated under this rule. (Water Pollution Control Board; 327 IAC 15-9-4; filed May 25, 1994, 11:00 a.m.: 17 IR 2293)

327 IAC 15-9-5 NOI letter requirements under this rule

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 5. (a) In addition to the NOI letter requirements contained in 327 IAC 15-3, a person regulated under this rule must identify in the NOI letter each point source discharge of storm water run-off, tank bottom water, and hydrostatic test water. This identification of point source discharge shall include the following:

(1) The discharge location of each outfall and its associated receiving stream.

(2) The type of wastewater discharged through each outfall.

(3) An identifying outfall number. The numbering shall start at 001 for the first outfall, 002 for the second outfall, and continue in that manner until all outfalls are numbered.

(b) The NOI letter must also include proof of publication of the following statement in a newspaper of largest circulation in the area of the discharge:

"(Your facility name, address, address of the location of the discharging facility, and the stream(s) receiving the

discharge(s)) is submitting a Notice of Intent letter to notify the Indiana Department of Environmental Management of our intent to comply with the requirements under 327 IAC 15-9 to discharge wastewater associated with petroleum products terminals. Any person aggrieved by this action may appeal in writing to the Technical Secretary of the Water Pollution Control Board for an adjudicatory hearing on the question of whether this facility should operate under this NPDES general permit rule. An appeal must be postmarked no later than fifteen (15) days from the date of this public notice. Such a written request for an adjudicatory hearing must:

- (A) state the name and address of the person making the request;
- (B) identify the interest of the person making the request;
- (C) identify any persons represented by the person making the request;
- (D) state with particularity the reasons for the request;
- (E) state with particularity the issues proposed for consideration at the hearing; and
- (F) state with particularity the reasons why the NPDES general permit rule should not be available to the discharger identified in this notice.

Any such request shall be mailed or delivered to:

Technical Secretary
Water Pollution Control Board
P.O. Box 6167
Indianapolis, Indiana 46206-6167".

(c) Following submittal of a NOI letter to IDEM and publication in the newspaper by the person requesting coverage under subsection (b), IDEM shall do the following:

- (1) Review the NOI for applicability pursuant to section 3 of this rule and for compliance with the requirements of subsection (a).
- (2) List this facility, the NPDES general permit tracking number, and the information contained in this notice in a monthly publication to be distributed by IDEM to all persons who have asked to receive NPDES general permit rule notification. This monthly publication shall be issued by IDEM on the 15th day of every month and shall identify all facilities which met both the NOI and newspaper publication requirements in the preceding month.

Requests to be placed on the NPDES general permit rule notification list shall be mailed or delivered to the address at 327 IAC 15-3-1.

(d) IDEM's monthly publication will also contain the following instructions:

"Any person aggrieved by this action may appeal in writing to the Technical Secretary of the Water Pollution Control Board for an adjudicatory hearing on the question of whether this facility should operate under this NPDES general permit rule. An appeal must be postmarked no later than fifteen (15) days from the publication date of this public notice. Such a written request for an adjudicatory hearing must:

- (A) state the name and address of the person making the request;
- (B) identify the interest of the person making the request;
- (C) identify any persons represented by the person making the request;
- (D) state with particularity the reasons for the request;
- (E) state with particularity the issues proposed for consideration at the hearing; and
- (F) identify the NPDES general permit rule terms and conditions which, in the judgment of the person making the request, would be appropriate to satisfy the requirements of the law governing this NPDES general permit rule. If any person filing such objections desires any part of this NPDES general permit rule to be stayed pending the outcome of the appeal, a specific request for such must be included in the request, identifying those parts of the rule to be stayed.

Any such request shall be mailed or delivered to:

Technical Secretary
Water Pollution Control Board
P.O. Box 6167
Indianapolis, Indiana 46206-6167".

(Water Pollution Control Board; 327 IAC 15-9-5; filed May 25, 1994, 11:00 a.m.: 17 IR 2293; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2657)

327 IAC 15-9-6 Deadline for submittal of NOI letter; additional information

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 6. (a) For any person operating under an existing individual NPDES permit, that regulates a wastewater discharge affected by this NPDES general permit rule, the information required under 327 IAC 15-3 shall be submitted to the commissioner any time between the effective date of the existing individual NPDES permit and one hundred eighty (180) days prior to the expiration date of the existing individual NPDES permit, unless the commissioner determines that a later date is acceptable. For any person operating under an individual NPDES permit that regulates a wastewater discharge affected by this NPDES general permit rule and that has expired and has been administratively extended, the information required under 327 IAC 15-3 shall be submitted to the commissioner within ninety (90) days of the effective date of this NPDES general permit rule, unless the commissioner determines that a later date is acceptable.

(b) For a person proposing a new discharge, the information required under 327 IAC 15-3 shall be submitted to the commissioner fifteen (15) days before the date on which the discharge is to commence as allowed in 327 IAC 15-3-3. (*Water Pollution Control Board; 327 IAC 15-9-6; filed May 25, 1994, 11:00 a.m.: 17 IR 2294*)

327 IAC 15-9-7 General conditions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 7. (a) A person regulated under this rule is authorized to discharge storm water run-off, tank bottom water, and hydrostatic test water through the outfalls identified in the NOI letter in accordance with this rule. Such discharge shall be limited and monitored as follows:

Parameter	Monthly Average Report	Daily Maximum Report	Units	Monitoring Requirements	
				Measurement Frequency	Sample Type
Flow	Report	Report	MGD	2XMonthly	Instantaneous
Oil & grease	10	15	mg/l	2XMonthly	See subsection (c)(2)
Total VOC	Report	Report	mg/l	See subsection (c)(3)	Grab
TOC	Report	Report	mg/l	See subsection (c)(3)	Grab
Ammonia (as N)	Report	Report	mg/l	See subsection (c)(3)	See subsection (c)(4)
Benzene	Report	Report	mg/l	See subsection (c)(3)	Grab
Total cyanide	Report	Report	mg/l	See subsection (c)(3)	See subsection (c)(4)
Lead	Report	Report	mg/l	See subsection (c)(3)	See subsection (c)(4)
TSS	30	45	mg/l	2XMonthly	See subsection (c)(4)

(b) A person regulated under this rule shall comply with the following additional discharge requirements:

(1) Tank bottom water shall not be discharged to any diked areas. Tank bottom water may be discharged directly through any outfall regulated under this rule.

(2) The pH shall not be less than six (6.0) or greater than nine (9.0) standard units. The pH shall be monitored by a monthly grab sample.

(3) The discharge shall not cause excessive foam in the receiving waters.

(4) The discharge shall be essentially free of floating and settleable solids.

(5) The discharge shall not contain oil or other substances in amounts sufficient to create a visible film or sheen on the receiving waters.

(6) The discharge shall be free of substances that are in amounts sufficient to be unsightly or deleterious, or which produce color, odor, or other conditions in such a degree as to create a nuisance.

(c) A person regulated under this rule shall comply with the following sampling requirements:

(1) The analytical and sampling methods used shall conform to the current version of 40 CFR 136 as referenced in 327 IAC 5-2-13(d)(1).

(2) A minimum of four (4) grab samples shall be collected at equally spaced time intervals during a forty-five (45) minute period. Each sample shall be analyzed individually, and the arithmetic mean of the measured concentrations shall be reported as the value for the twenty-four (24) hour period.

(3) On days when tank bottom water is discharged or tanks are hydrostatically tested, a person regulated under this rule shall monitor for these parameters DAILY. This sampling must occur during the time of discharge.

(4) A minimum of four (4) equal volume grab samples shall be taken at equally spaced intervals during the period in which tank bottom water is being discharged, or during a forty-five (45) minute period if tank bottom water is not being discharged. The four (4) grab samples shall be composited prior to analysis.

(5) Total volatile organic compounds (VOCs) shall be characterized by an organic chemical scan. Wastewater samples shall be prepared and analyzed in accordance with U.S. EPA Analytical Method 624 (40 CFR 136, Appendix A), as referenced in 327 IAC 5-2-13(d)(1). During the quantitative analysis for total VOCs, the additional organic compounds that are not listed as priority pollutants in Method 624 shall be identified and quantified. This identification and quantification shall be made when these additional organic compounds are indicated to be present in the extracts by peaks on the reconstructed gas chromatograms (total ion plots) in magnitudes of more than ten (10) times higher than the peak-to-peak background noise. Identification shall be by reference to the EPA/NIH computerized library of mass spectra, with visual confirmation by an experienced analyst. Quantification may be an order of magnitude estimate based upon comparison with an internal standard.

(6) Lead is intended to be analyzed by a test method which will measure the quantity of acid-soluble metal present; however, an approved analytical method for acid-soluble is not yet available. A person shall measure and report lead as total recoverable metal until such a test method is approved which measures acid-soluble metal.

(7) Samples taken in compliance with the monitoring requirements in this section shall be taken at a point representative of the discharge but prior to entry into waters of the state as defined in 327 IAC 2-1-9.

(8) Samples and measurements taken as required in this section shall be representative of the volume and nature of the monitored discharge.

(d) A person regulated under this rule shall comply with the following reporting requirements:

(1) Monthly discharge monitoring reports shall be submitted to the data management section at the address listed in 327 IAC 15-3-1, containing results obtained during the previous month and shall be postmarked no later than the twenty-eighth day of the month following each completed monitoring period. During a month in which no discharge occurs, the person regulated under this rule shall submit the report stating that no discharge occurred.

(2) For each measurement or sample taken pursuant to the requirements of this rule, the facility shall record the following information:

- (A) The exact place, date, and time of sampling.
- (B) The person(s) who performed the sampling or measurement.
- (C) The dates the analyses were performed.
- (D) The person(s) who performed the analyses.
- (E) The analytical techniques or methods used.
- (F) The results of all required analyses.

(3) Monitoring of any pollutant at the location(s) identified in the NOI letter more frequently than required under this rule, using approved analytical methods, the results of such monitoring shall be included in the calculation and reporting of the values required in the monthly discharge monitoring report. Such increased frequency shall also be indicated.

(4) All records and information resulting from the monitoring activities required under this rule, including all records of analyses performed and calibration and maintenance of instrumentation, shall be retained for a minimum of three (3) years. When the original records are kept at another location, a copy of such records shall be kept at the facility. The three (3) year period shall be extended:

- (A) automatically during the course of any unresolved litigation regarding the discharge of pollutants by the facility or as regarding promulgated effluent guidelines applicable to the facility; or
- (B) when requested by the regional administrator or the Indiana department of environmental management.

(Water Pollution Control Board; 327 IAC 15-9-7; filed May 25, 1994, 11:00 a.m.: 17 IR 2294; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2657)

327 IAC 15-9-8 Standard conditions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 8. In addition to the conditions set forth in this rule, the standard conditions for the NPDES general permit rule under 327 IAC 15-4 shall apply also to this rule. *(Water Pollution Control Board; 327 IAC 15-9-8; filed May 25, 1994, 11:00 a.m.: 17 IR 2296)*

327 IAC 15-9-9 Inspection and enforcement

Authority: IC 13-1-3-3; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 9. (a) In accordance with 327 IAC 5-1-3(c), the commissioner and/or designated representative may inspect any facility regulated under this rule at any time.

(b) Any person violating any provision of this rule shall be subject to enforcement and penalties as set forth under 327 IAC 15-1-4. (*Water Pollution Control Board; 327 IAC 15-9-9; filed May 25, 1994, 11:00 a.m.: 17 IR 2296*)

327 IAC 15-9-10 Duration of coverage

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 10. Coverage under this rule is granted by the commissioner for a period of five (5) years from the date coverage commences. To obtain renewal of coverage under this general permit rule, the information required under 327 IAC 15-3 shall be submitted to the commissioner within ninety (90) days of the termination of coverage under this NPDES general permit rule, unless the commissioner determines that a later date is acceptable. (*Water Pollution Control Board; 327 IAC 15-9-10; filed May 25, 1994, 11:00 a.m.: 17 IR 2296*)

Rule 10. Wastewater Discharge Associated with Ground Water Petroleum Remediation Systems

327 IAC 15-10-1 Purpose

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 1. The purpose of this rule is to establish discharge requirements for point source discharges of wastewater associated with ground water remediation systems so that the public health, existing water uses, and aquatic biota are protected. (*Water Pollution Control Board; 327 IAC 15-10-1; filed May 25, 1994, 11:00 a.m.: 17 IR 2296*)

327 IAC 15-10-2 Definitions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3-1.5; IC 13-7-1

Sec. 2. In addition to the definitions contained in IC 13-7-1 and IC 13-1-3-1.5 and in 327 IAC 5 and 327 IAC 15-1-2, the following definitions apply throughout this rule:

(1) "Concentration" means the weight of any given material present in a unit volume of liquid. Unless otherwise indicated in this rule, concentration values shall be expressed in micrograms per liter ($\mu\text{g/l}$).

(2) "Daily maximum concentration" means the daily determination of concentration for any calendar day.

(3) "Monthly average concentration" means the arithmetic average (proportional to flow) of all daily determinations of concentration made during a calendar month. Daily determinations of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during the calendar day.

(4) "Wastewater discharge associated with ground water remediation system" means the discharge from any conveyance which is used for collecting and conveying wastewater which is directly related to the ground water remediation system.

(*Water Pollution Control Board; 327 IAC 15-10-2; filed May 25, 1994, 11:00 a.m.: 17 IR 2296*)

327 IAC 15-10-3 Applicability

Authority: IC 13-14-8; IC 13-14-9; IC 13-15-1-2; IC 13-15-2-1; IC 13-18-3

Affected: IC 13-11-2; IC 13-18-4

Sec. 3. This rule applies to all persons who:

(1) meet the NPDES general permit rule applicability requirements under 327 IAC 15-2-3;

(2) have a point source discharge of treated wastewater controlled by a valid individual NPDES permit; or

(3) discharge treated ground water back into the ground immediately upgradient of the contaminated site, and the subsequent movement of this water downgradient to the treatment site causes further contaminants to be flushed from the site and enhances the remediation.

(*Water Pollution Control Board; 327 IAC 15-10-3; filed May 25, 1994, 11:00 a.m.: 17 IR 2297; filed Jan 14, 1997, 12:00 p.m.: 20*)

IR 1478)

327 IAC 15-10-4 General permit rule boundary

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 4. Facilities existing within the boundaries of Indiana affected by this rule are regulated under this rule. (*Water Pollution Control Board; 327 IAC 15-10-4; filed May 25, 1994, 11:00 a.m.: 17 IR 2297*)

327 IAC 15-10-5 NOI letter requirements under this rule

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 5. (a) In addition to the NOI letter requirements contained in 327 IAC 15-3, a person regulated under this rule must identify in the NOI letter each point source discharge of wastewater associated with ground water petroleum remediation systems. This identification of point source discharge shall include the following:

- (1) The discharge location of each outfall and its associated receiving stream.
- (2) The type of wastewater discharged through each outfall.
- (3) An identifying outfall number. The numbering shall start at 001 for the first outfall, 002 for the second outfall, and continue in that manner until all outfalls are numbered.

(b) The NOI letter must also include proof of publication of the following statement in a newspaper of largest circulation in the area of the discharge:

"(Your facility name, address, address of the location of the discharge, and the stream(s) receiving the discharge(s)) is submitting a Notice of Intent letter to notify the Indiana Department of Environmental Management of our intent to comply with the requirements under 327 IAC 15-10 to discharge wastewater associated with ground water petroleum remediation systems. Any person aggrieved by this action may appeal in writing to the Technical Secretary of the Water Pollution Control Board for an adjudicatory hearing on the question of whether this facility should operate under this NPDES general permit rule. An appeal must be postmarked no later than fifteen (15) days from the date of this public notice. Such a written request for an adjudicatory hearing must:

- (A) state the name and address of the person making the request;
- (B) identify the interest of the person making the request;
- (C) identify any persons represented by the person making the request;
- (D) state with particularity the reasons for the request;
- (E) state with particularity the issues proposed for consideration at the hearing; and
- (F) state with particularity the reasons why the NPDES general permit rule should not be available to the discharger identified in this notice.

Any such request shall be mailed or delivered to:

Technical Secretary
Water Pollution Control Board
P.O. Box 6167
Indianapolis, Indiana 46206-6167".

(c) Following submittal of a NOI letter to IDEM and publication in the newspaper by the person requesting coverage under subsection (b), IDEM shall do the following:

- (1) Review the NOI for applicability pursuant to section 3 of this rule and for compliance with the requirements of subsection (a).
- (2) List this facility, the NPDES general permit tracking number, and the information contained in this notice in a monthly publication to be distributed by IDEM to all persons who have asked to receive NPDES general permit rule notification. This monthly publication shall be issued by IDEM on the fifteenth day of every month and shall identify all facilities which met both the NOI and newspaper publication requirements in the preceding month.

Requests to be placed on the NPDES general permit rule notification list shall be mailed or delivered to the address at 327 IAC 15-3-1.

(d) IDEM's monthly publication will also contain the following instructions:

"Any person aggrieved by this action may appeal in writing to the Technical Secretary of the Water Pollution Control Board for an adjudicatory hearing on the question of whether this facility should operate under this NPDES general permit rule. An appeal must be postmarked no later than fifteen (15) days from the publication date of this public notice. Such a written

request for an adjudicatory hearing must:

- (A) state the name and address of the person making the request;
 - (B) identify the interest of the person making the request;
 - (C) identify any persons represented by the person making the request;
 - (D) state with particularity the reasons for the request;
 - (E) state with particularity the issues proposed for consideration at the hearing; and
 - (F) identify the NPDES general permit rule terms and conditions which, in the judgment of the person making the request, would be appropriate to satisfy the requirements of the law governing this NPDES general permit rule.
- If any person filing such objections desires any part of this NPDES general permit rule to be stayed pending the outcome of the appeal, a specific request for such must be included in the request, identifying those parts of the rule to be stayed.

Any such request shall be mailed or delivered to:

Technical Secretary
Water Pollution Control Board
P.O. Box 6167
Indianapolis, Indiana 46206-6167".

(Water Pollution Control Board; 327 IAC 15-10-5; filed May 25, 1994, 11:00 a.m.: 17 IR 2297; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2657)

327 IAC 15-10-6 Deadline for submittal of NOI letter; additional information

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 6. (a) For any person operating under an existing individual NPDES permit, that regulates a wastewater discharge affected by this NPDES general permit rule, the information required under 327 IAC 15-3 shall be submitted to the commissioner any time between the effective date of the existing individual NPDES permit and one hundred eighty (180) days prior to the expiration date of the existing individual NPDES permit, unless the commissioner determines that a later date is acceptable. For any person operating under an individual NPDES permit that regulates a wastewater discharge affected by this NPDES general permit rule and that has expired and has been administratively extended, the information required under 327 IAC 15-3 shall be submitted to the commissioner within ninety (90) days of the effective date of this NPDES general permit rule, unless the commissioner determines that a later date is acceptable.

(b) For a person proposing a new discharge, the information required under 327 IAC 15-3 shall be submitted to the commissioner fifteen (15) days before the date on which the discharge is to commence as allowed in 327 IAC 15-3-3. *(Water Pollution Control Board; 327 IAC 15-10-6; filed May 25, 1994, 11:00 a.m.: 17 IR 2298)*

327 IAC 15-10-7 General conditions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 7. (a) A person regulated under this rule is authorized to discharge wastewater associated with ground water remediation systems through outfalls identified in the NOI letter in accordance with this rule. Such discharge shall be limited and monitored as follows:

<u>Parameter</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Units</u>	<u>Monitoring Requirements</u>	
				<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow	Report	Report	MGD	1XMonthly	24-hr. total
Benzene	Report	5.0	µg/l	1XMonthly	Grab

(b) A person regulated under this rule shall comply with the following additional discharge requirements:

- (1) The flow may be estimated using the pump rate and the length of pumping time.
- (2) The pH shall not be less than six (6.0) or greater than nine (9.0) standard units. The pH shall be monitored by a monthly grab sample.
- (3) The discharge shall not cause excessive foam in the receiving waters.
- (4) The discharge shall be essentially free of floating and settleable solids.
- (5) The discharge shall not contain oil or other substances in amounts sufficient to create a visible film or sheen on the receiving waters.

(6) The discharge shall be free of substances that are in amounts sufficient to be unsightly or deleterious, or which produce color, odor, or other conditions in such a degree as to create a nuisance.

(c) A person regulated under this rule shall comply with the following sampling requirements:

(1) The analytical and sampling methods used shall conform to the current version of 40 CFR 136 as referenced in 327 IAC 5-2-13(d)(1).

(2) Samples taken in compliance with the monitoring requirements in this section shall be taken at a point representative of the discharge but prior to entry into waters of the state as defined in 327 IAC 2-1-9.

(3) Samples and measurements taken as required in this section shall be representative of the volume and nature of the monitored discharge.

(d) A person regulated under this rule shall comply with the following reporting requirements:

(1) Monthly discharge monitoring reports shall be submitted to the data management section at the address listed in 327 IAC 15-3-1, containing results obtained during the previous month and shall be postmarked no later than the twenty-eighth day of the month following each completed monitoring period. During a month in which no discharge occurs, the person regulated under this rule shall submit the report stating that no discharge occurred.

(2) For each measurement or sample taken pursuant to the requirements of this rule, the facility shall record the following information:

(A) The exact place, date, and time of sampling.

(B) The person(s) who performed the sampling or measurement.

(C) The dates the analyses were performed.

(D) The person(s) who performed the analyses.

(E) The analytical techniques or methods used.

(F) The results of all required analyses.

(3) Monitoring of any pollutant at the location(s) identified in the NOI letter more frequently than required under this rule, using approved analytical methods, the results of such monitoring shall be included in the calculation and reporting of the values required in the monthly discharge monitoring report. Such increased frequency shall also be indicated.

(4) All records and information resulting from the monitoring activities required under this rule, including all records of analyses performed and calibration and maintenance of instrumentation, shall be retained for a minimum of three (3) years. When the original records are kept at another location, a copy of such records shall be kept at the facility. The three (3) year period shall be extended:

(A) automatically during the course of any unresolved litigation regarding the discharge of pollutants by the facility or as regarding promulgated effluent guidelines applicable to the facility; or

(B) when requested by the regional administrator or the Indiana department of environmental management.

(Water Pollution Control Board; 327 IAC 15-10-7; filed May 25, 1994, 11:00 a.m.: 17 IR 2298; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2658)

327 IAC 15-10-8 Standard conditions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 8. In addition to the conditions set forth in this rule, the standard conditions for the NPDES general permit rule under 327 IAC 15-4 shall apply also to this rule. *(Water Pollution Control Board; 327 IAC 15-10-8; filed May 25, 1994, 11:00 a.m.: 17 IR 2299)*

327 IAC 15-10-9 Inspection and enforcement

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 9. In accordance with 327 IAC 5-1-3(c), the commissioner and/or designated representative may inspect any facility regulated under this rule at any time. *(Water Pollution Control Board; 327 IAC 15-10-9; filed May 25, 1994, 11:00 a.m.: 17 IR 2299)*

327 IAC 15-10-10 Duration of coverage

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 10. Coverage under this rule is granted by the commissioner for a period of five (5) years from the date coverage

commences. To obtain renewal of coverage under this general permit rule, the information required under 327 IAC 15-3 shall be submitted to the commissioner within ninety (90) days of the termination of coverage under this NPDES general permit rule, unless the commissioner determines that a later date is acceptable. (*Water Pollution Control Board; 327 IAC 15-10-10; filed May 25, 1994, 11:00 a.m.: 17 IR 2299*)

Rule 11. Wastewater Discharge Associated with Hydrostatic Testing of Commercial Pipelines

327 IAC 15-11-1 Purpose

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 1. The purpose of this rule is to establish requirements for point source discharges of wastewater associated with hydrostatic testing of commercial pipelines so that the public health, existing water uses, and aquatic biota are protected. (*Water Pollution Control Board; 327 IAC 15-11-1; filed May 25, 1994, 11:00 a.m.: 17 IR 2299*)

327 IAC 15-11-2 Definitions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3-1.5; IC 13-7-1

Sec. 2. In addition to the definitions contained in IC 13-7-1 and IC 13-1-3-1.5 and in 327 IAC 5 and 327 IAC 15-1-2, the following definitions apply throughout this rule:

- (1) "Commercial pipeline" means a pipeline, generally underground, that transports petroleum or natural gas.
- (2) "Concentration" means the weight of any given material present in a unit volume of liquid. Unless otherwise indicated in this rule, concentration values shall be expressed in milligrams per liter (mg/l).
- (3) "Daily maximum concentration" means the daily determination of concentration for any calendar day.
- (4) "Monthly average concentration" means the arithmetic average (proportional to flow) of all daily determinations of concentration made during a calendar month. Daily determinations of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during the calendar day.
- (5) "Wastewater discharge associated with hydrostatic testing of commercial pipelines" means the discharge from conveyance, used for collecting and conveying wastewater which is directly related to commercial pipelines. This includes discharge of water used for hydrostatically testing new or existing pipelines.

(*Water Pollution Control Board; 327 IAC 15-11-2; filed May 25, 1994, 11:00 a.m.: 17 IR 2299*)

327 IAC 15-11-3 Applicability

Authority: IC 13-14-8; IC 13-14-9; IC 13-15-1-2; IC 13-15-2-1; IC 13-18-3

Affected: IC 13-11-2; IC 13-18-4

Sec. 3. This rule applies to all persons who:

- (1) meet the NPDES general permit rule applicability requirements under 327 IAC 15-2-3; or
- (2) have a point source discharge of wastewater controlled by a valid individual NPDES permit.

(*Water Pollution Control Board; 327 IAC 15-11-3; filed May 25, 1994, 11:00 a.m.: 17 IR 2300; filed Jan 14, 1997, 12:00 p.m.: 20 IR 1478*)

327 IAC 15-11-4 General permit rule boundary

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 4. Facilities existing within the boundaries of Indiana affected by this rule are regulated under this rule. (*Water Pollution Control Board; 327 IAC 15-11-4; filed May 25, 1994, 11:00 a.m.: 17 IR 2300*)

327 IAC 15-11-5 NOI letter requirements under this rule

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 5. (a) In addition to the NOI letter requirements contained in 327 IAC 15-3, a person regulated under this rule must identify in the NOI letter each point source discharge of wastewater associated with the hydrostatic testing of new or existing commercial pipelines. This identification of point source discharge shall include the following:

- (1) The discharge location of each outfall and its associated receiving stream.
- (2) The type of wastewater discharged through each outfall.
- (3) An identifying outfall number. The numbering shall start at 001 for the first outfall, 002 for the second outfall, and continue in that manner until all outfalls are numbered.
- (b) The NOI letter must also include proof of publication of the following statement in a newspaper of largest circulation in the area of the discharge:

"(Your facility name, address, address of the location of the discharging facility, and the stream(s) receiving the discharge(s)) is submitting a Notice of Intent letter to notify the Indiana Department of Environmental Management of our intent to comply with the requirements under 327 IAC 15-11 to discharge wastewater associated with hydrostatic testing of commercial pipelines. Any person aggrieved by this action may appeal in writing to the Technical Secretary of the Water Pollution Control Board for an adjudicatory hearing on the question of whether this facility should operate under this NPDES general permit rule. An appeal must be postmarked no later than fifteen (15) days from the date of this public notice. Such a written request for an adjudicatory hearing must:

- (A) state the name and address of the person making the request;
- (B) identify the interest of the person making the request;
- (C) identify any persons represented by the person making the request;
- (D) state with particularity the reasons for the request;
- (E) state with particularity the issues proposed for consideration at the hearing; and
- (F) state with particularity the reasons why the NPDES general permit rule should not be available to the discharger identified in this notice.

Any such request shall be mailed or delivered to:

Technical Secretary
Water Pollution Control Board
P.O. Box 6167
Indianapolis, Indiana 46206-6167".

(c) Following submittal of a NOI letter to IDEM and publication in the newspaper by the person requesting coverage under subsection (b), IDEM shall do the following:

- (1) Review the NOI for applicability pursuant to section 3 of this rule and for compliance with the requirements of subsection (a).
- (2) List this facility, the NPDES general permit tracking number, and the information contained in this notice in a monthly publication to be distributed by IDEM to all persons who have asked to receive NPDES general permit rule notification. This monthly publication shall be issued by IDEM on the fifteenth day of every month and shall identify all facilities which met both the NOI and newspaper publication requirements in the preceding month.

Requests to be placed on the NPDES general permit rule notification list shall be mailed or delivered to the address at 327 IAC 15-3-1.

(d) IDEM's monthly publication will also contain the following instructions:

"Any person aggrieved by this action may appeal in writing to the Technical Secretary of the Water Pollution Control Board for an adjudicatory hearing on the question of whether this facility should operate under this NPDES general permit rule. An appeal must be postmarked no later than fifteen (15) days from the publication date of this public notice. Such a written request for an adjudicatory hearing must:

- (A) state the name and address of the person making the request;
- (B) identify the interest of the person making the request;
- (C) identify any persons represented by the person making the request;
- (D) state with particularity the reasons for the request;
- (E) state with particularity the issues proposed for consideration at the hearing; and
- (F) identify the NPDES general permit rule terms and conditions which, in the judgment of the person making the request, would be appropriate to satisfy the requirements of the law governing this NPDES general permit rule. If any person filing such objections desires any part of this NPDES general permit rule to be stayed pending the outcome of the appeal, a specific request for such must be included in the request, identifying those parts of the rule to be stayed.

Any such request shall be mailed or delivered to:

Technical Secretary

Water Pollution Control Board
P.O. Box 6167
Indianapolis, Indiana 46206-6167".

(Water Pollution Control Board; 327 IAC 15-11-5; filed May 25, 1994, 11:00 a.m.: 17 IR 2300; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2658)

327 IAC 15-11-6 Deadline for submittal of NOI letter; additional information

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 6. (a) For any person operating under an existing individual NPDES permit that regulates a wastewater discharge affected by this NPDES general permit rule, the information required under 327 IAC 15-3 shall be submitted to the commissioner any time between the effective date of the existing individual NPDES permit and one hundred eighty (180) days prior to the expiration date of the existing individual NPDES permit, unless the commissioner determines that a later date is acceptable. For any person operating under an individual NPDES permit that regulates a wastewater discharge affected by this NPDES general permit rule and that has expired and has been administratively extended, the information required under 327 IAC 15-3 shall be submitted to the commissioner within ninety (90) days of the effective date of this NPDES general permit rule, unless the commissioner determines that a later date is acceptable.

(b) For a person proposing a new discharge, the information required under 327 IAC 15-3 shall be submitted to the commissioner fifteen (15) days before the date on which the discharge is to commence as allowed in 327 IAC 15-3-3. (Water Pollution Control Board; 327 IAC 15-11-6; filed May 25, 1994, 11:00 a.m.: 17 IR 2301)

327 IAC 15-11-7 General conditions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 7. (a) A person regulated under this rule is authorized to discharge wastewater associated with hydrostatic testing of new or existing commercial pipelines through the outfalls identified in the NOI letter in accordance with this rule. Such discharge shall be limited and monitored as follows:

<u>Parameter</u>	<u>Monitoring Requirements</u>				
	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Units</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow	Report	Report	MGD	Daily	24-hr. total
Oil and grease	Å	15	mg/l	Daily	Grab
TSS	Å	45	mg/l	Daily	Grab

(b) A person regulated under this rule shall comply with the following additional discharge requirements:

(1) The discharge volume may be estimated by calculating the volume of water which can be contained in the section of pipeline being tested.

(2) The pH shall not be less than six (6.0) or greater than nine (9.0) standard units. The pH shall be monitored by daily grab sample.

(3) The discharge shall not cause excessive foam in the receiving waters.

(4) The discharge shall be essentially free of floating and settleable solids.

(5) The discharge shall not contain oil or other substances in amounts sufficient to create a visible film or sheen on the receiving waters.

(6) The discharge shall be free of substances that are in amounts sufficient to be unsightly or deleterious or which produce color, odor, or other conditions in such a degree as to create a nuisance.

(7) There shall be no impingement and entrainment of fish when drawing water from a surface water body.

(8) Wastes generated by cleaning the interior of a pipeline shall be disposed of in accordance with all applicable statutes and rules.

(c) A person regulated under this rule shall comply with the following sampling requirements:

(1) The analytical and sampling methods used shall conform to the current version of 40 CFR 136 as referenced in 327 IAC 5-2-13(d)(1).

(2) Grab samples shall be taken of the hydrostatic test water being discharged as it leaves the pipeline being tested or after receiving treatment at the beginning and at the end of the discharge and two (2) times during the discharge at evenly spaced time intervals. All of the grab samples shall be combined into one (1) composite sample at the end of the test period for

analysis.

(3) Samples taken in compliance with the monitoring requirements in this section shall be taken at a point representative of the discharge but prior to entry into the waters of the state as defined in 327 IAC 2-1-9.

(4) Samples and measurements taken as required in this section shall be representative of the volume and nature of the monitored discharge.

(d) A person regulated under this rule shall comply with the following reporting requirements:

(1) A discharge monitoring report shall be submitted to the data management section at the address listed in 327 IAC 15-3-1, containing results for the discharge event covered by this rule. The report shall be postmarked no later than the twenty-eighth day of the month following the discharge event.

(2) For each measurement or sample taken pursuant to the requirements of this rule, the facility shall record the following information:

- (A) The exact place, date, and time of sampling.
- (B) The person(s) who performed the sampling or measurements.
- (C) The dates the analyses were performed.
- (D) The person(s) who performed the analyses.
- (E) The analytical techniques or methods used.
- (F) The results of all required analyses.

(3) Monitoring of any pollutant at the location(s) identified in the NOI letter more frequently than required under this rule, using approved analytical methods, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report. Such increase in frequency shall also be indicated.

(4) All records and information resulting from the monitoring activities required under this rule, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years. When the original records are kept at another location, a copy of all such records shall be kept at the facility. The three (3) year period shall be extended:

- (A) automatically during the course of any unresolved litigation regarding the discharge of pollutants by the facility or as regarding promulgated effluent guidelines applicable to the facility; or
- (B) when requested by the regional administrator or the Indiana department of environmental management.

(Water Pollution Control Board; 327 IAC 15-11-7; filed May 25, 1994, 11:00 a.m.: 17 IR 2301; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2658)

327 IAC 15-11-8 Standard conditions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 8. In addition to the conditions set forth in this rule, the standard conditions for the NPDES general permit rule under 327 IAC 15-4 shall apply also to this rule. *(Water Pollution Control Board; 327 IAC 15-11-8; filed May 25, 1994, 11:00 a.m.: 17 IR 2302)*

327 IAC 15-11-9 Inspection and enforcement

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 9. (a) In accordance with 327 IAC 5-1-3(c), the commissioner and/or designated representative may inspect any facility regulated under this rule at any time.

(b) Any person violating any provision of this rule shall be subject to enforcement and penalties as set forth under 327 IAC 15-1-4. *(Water Pollution Control Board; 327 IAC 15-11-9; filed May 25, 1994, 11:00 a.m.: 17 IR 2302)*

327 IAC 15-11-10 Duration of coverage

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 10. Coverage under this rule is granted by the commissioner for a period of five (5) years from the date coverage commences. To obtain renewal of coverage under this general permit rule, the information required under 327 IAC 15-3 shall be submitted to the commissioner within ninety (90) days of the termination of coverage under this NPDES general permit rule, unless the commissioner determines that a later date is acceptable. *(Water Pollution Control Board; 327 IAC 15-11-10; filed May 25, 1994,*

11:00 a.m.: 17 IR 2302)

Rule 12. Facilities Engaged in Sand, Gravel, Dimension Stone, or Crushed Stone Operations

327 IAC 15-12-1 Purpose

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 1. The purpose of this rule is to regulate wastewater discharges from sand, gravel, dimension stone, and crushed stone operations which utilize sedimentation basin treatment for:

- (1) pit dewatering;
- (2) channel machines;
- (3) broaching;
- (4) jet piercing;
- (5) scrubber water from wet scrubbers used for air pollution control;
- (6) dust suppression spray water;
- (7) wash water from spray bars for final screening operations; and
- (8) noncontact cooling water for cooling of:
 - (A) crusher bearings;
 - (B) drills;
 - (C) saws;
 - (D) dryers;
 - (E) pumps; and
 - (F) air compressors;

so that the public health, existing water uses, and aquatic biota are protected. (*Water Pollution Control Board; 327 IAC 15-12-1; filed May 25, 1994, 11:00 a.m.: 17 IR 2303*)

327 IAC 15-12-2 Definitions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3-1.5; IC 13-7-1

Sec. 2. In addition to the definitions contained in IC 13-7-1 and IC 13-1-3-1.5 and in 327 IAC 5 and 327 IAC 15-1-2, the following definitions apply throughout this rule:

- (1) "4 × yearly sample frequency" means the performance of the associated monitoring once any time during each of the four (4) annual quarters:
 - (A) January-February-March;
 - (B) April-May-June;
 - (C) July-August-September; and
 - (D) October-November-December.
- (2) "Broaching" means a drilling method whereupon successively larger and deeper holes are cut into the stone until the stone is removed between the holes. Water is used to control dust, wash away stone chips, and cool the drill.
- (3) "Channel machine" means a long, semi-automated, multiple-head chisel machine used primarily to quarry limestone. Stone chips created during chiseling must be washed constantly away with water.
- (4) "Concentration" means the mass of any given material present in a unit volume of liquid. Unless otherwise indicated in this rule, concentration values shall be expressed in milligrams per liter (mg/l).
- (5) "Feldspar" means any of a group of crystalline minerals that consists of aluminum silicates with either potassium, sodium, calcium, or barium.
- (6) "Feldspathic" means relating to or containing feldspar.
- (7) "Ilmenite" means an iron black mineral composed of iron, titanium, and oxygen.
- (8) "Jet piercing" means fuel oil forced under pressure through a nozzle producing a high velocity jet flame which is combined with a stream of water to cut a channel by disintegration.
- (9) "Pit dewatering" means any water that is impounded or that collects in the pit and is pumped, drained, or otherwise removed from the pit through the efforts of the pit operator. This term shall also include wet pit overflows caused solely by direct rainfall and/or ground water seepage.
- (10) "Settleable solids" means that matter measured by the volumetric method specified in 40 CFR 434.64, which is: Fill

an Imhoff cone to the one (1) liter mark with a thoroughly mixed sample. Allow to settle undisturbed for forty-five (45) minutes. Gently stir along the inside surface of the cone with a stirring rod. Allow to settle undisturbed for fifteen (15) minutes longer. Record the volume of settled material in the cone as milliliters per liter (ml/l). Where a separation of settleable and floating materials occurs, do not include the floating material in the reading. The method detection limit for measuring settleable solids shall be four-tenths (0.4) ml/l.

(11) "TSS" or "total suspended solids" means the mass of suspended matter in wastewater retained on a standard glass fiber filter after filtration of a well-mixed sample and after drying for one (1) hour at one hundred three degrees Celsius (103°C).

(*Water Pollution Control Board; 327 IAC 15-12-2; filed May 25, 1994, 11:00 a.m.: 17 IR 2303; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2658*)

327 IAC 15-12-3 Applicability

Authority: IC 13-14-8; IC 13-14-9; IC 13-15-1-2; IC 13-15-2-1; IC 13-18-3

Affected: IC 13-11-2; IC 13-18-4

Sec. 3. (a) This rule applies to all persons who:

(1) meet the NPDES general permit rule applicability requirements under 327 IAC 15-2-3; or

(2) have an existing point source discharge of wastewater controlled by a valid individual NPDES permit.

(b) Facilities not authorized to discharge by this NPDES general permit rule and are required to obtain an individual NPDES permit are as follows:

(1) Crushed stone operations utilizing flotation agents to remove impurities from marble or other carbonaceous rock. The flotation agents utilized include:

(A) organic amines;

(B) fatty acids; and

(C) pine oils.

(2) Industrial sand operations utilizing:

(A) acid flotation to effect removal of iron oxide and ilmenite impurities;

(B) alkaline flotation to remove aluminate bearing materials; or

(C) hydrofluoric acid flotation for removal of feldspar.

(3) Industrial sand operations utilizing the acid leaching process. The acid leaching process pertains to the removal of iron from feldspathic sand for use in glass manufacturing. A strong hydrochloric or sulfuric acid is used.

The types of process wastewater identified in this subsection can contain varying concentrations of substances that may require water quality based effluent limits or best professional judgment limits. (*Water Pollution Control Board; 327 IAC 15-12-3; filed May 25, 1994, 11:00 a.m.: 17 IR 2303; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2658; filed Jan 14, 1997, 12:00 p.m.: 20 IR 1478*)

327 IAC 15-12-4 General permit rule boundary

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 4. Facilities existing within the boundaries of Indiana affected by this rule are regulated under this rule. (*Water Pollution Control Board; 327 IAC 15-12-4; filed May 25, 1994, 11:00 a.m.: 17 IR 2304*)

327 IAC 15-12-5 NOI letter requirements under this rule

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 5. (a) In addition to the NOI letter requirements contained in 327 IAC 15-3, a person regulated under this rule must identify in the NOI letter each point source discharge regulated under this rule. This identification of point source discharge shall include the following:

(1) The discharge location of each outfall and its associated receiving stream.

(2) The type of wastewater discharged through each outfall.

(3) An identifying outfall number. The numbering shall start at 001 for the first outfall, 002 for the second outfall, and continue in that manner until all outfalls are numbered.

(4) A topographical map identifying the location of the operation, the receiving stream(s), and the location of each numbered outfall.

(b) The NOI letter must also include proof of publication of the following statement in a newspaper of largest circulation in the area of the discharge:

"(Your facility name, address, address of the location of the discharging facility, and the stream(s) receiving the discharge(s)) is submitting a Notice of Intent letter to notify the Indiana Department of Environmental Management of our intent to comply with the requirements under 327 IAC 15-12 to discharge wastewater associated with sand, gravel, dimension stone, or crushed stone operations. Any person aggrieved by this action may appeal in writing to the Technical Secretary of the Water Pollution Control Board for an adjudicatory hearing on the question of whether this facility should operate under this NPDES general permit rule. An appeal must be postmarked no later than fifteen (15) days from the date of this public notice. Such a written request for an adjudicatory hearing must:

- (A) state the name and address of the person making the request;
- (B) identify the interest of the person making the request;
- (C) identify any persons represented by the person making the request;
- (D) state with particularity the reasons for the request;
- (E) state with particularity the issues proposed for consideration at the hearing; and
- (F) state with particularity the reasons why the NPDES general permit rule should not be available to the discharger identified in this notice.

Any such request shall be mailed or delivered to:

Technical Secretary
Water Pollution Control Board
P.O. Box 6167
Indianapolis, Indiana 46206-6167".

(c) Following submittal of a NOI letter to IDEM and publication in the newspaper by the person requesting coverage under subsection (b), IDEM shall do the following:

- (1) Review the NOI for applicability pursuant to section 3 of this rule and for compliance with the requirements of subsection (a).
- (2) List this facility, the NPDES general permit tracking number, and the information contained in this notice in a monthly publication to be distributed by IDEM to all persons who have asked to receive NPDES general permit rule notification. This monthly publication shall be issued by IDEM on the fifteenth day of every month and shall identify all facilities which met both the NOI and newspaper publication requirements in the preceding month.

Requests to be placed on the NPDES general permit rule notification list shall be mailed or delivered to the address at 327 IAC 15-3-1.

(d) IDEM's monthly publication will also contain the following instructions:

"Any person aggrieved by this action may appeal in writing to the Technical Secretary of the Water Pollution Control Board for an adjudicatory hearing on the question of whether this facility should operate under this NPDES general permit rule. An appeal must be postmarked no later than fifteen (15) days from the publication date of this public notice. Such a written request for an adjudicatory hearing must:

- (A) state the name and address of the person making the request;
- (B) identify the interest of the person making the request;
- (C) identify any persons represented by the person making the request;
- (D) state with particularity the reasons for the request;
- (E) state with particularity the issues proposed for consideration at the hearing; and
- (F) identify the NPDES general permit rule terms and conditions which, in the judgment of the person making the request, would be appropriate to satisfy the requirements of the law governing this NPDES general permit rule. If any person filing such objections desires any part of this NPDES general permit rule to be stayed pending the outcome of the appeal, a specific request for such must be included in the request, identifying those parts of the rule to be stayed.

Any such request shall be mailed or delivered to:

Technical Secretary
Water Pollution Control Board
P.O. Box 6167
Indianapolis, Indiana 46206-6167".

(Water Pollution Control Board; 327 IAC 15-12-5; filed May 25, 1994, 11:00 a.m.: 17 IR 2304; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2658)

327 IAC 15-12-6 Deadline for submittal of NOI letter; additional information

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 6. (a) For any person operating under an existing individual NPDES permit, that regulates a wastewater discharge affected by this NPDES general permit rule, the information required under 327 IAC 15-3 shall be submitted to the commissioner any time between the effective date of the existing individual NPDES permit and one hundred eighty (180) days prior to the expiration date of the existing individual NPDES permit, unless the commissioner determines that a later date is acceptable. For any person operating under an individual NPDES permit that regulates a wastewater discharge affected by this NPDES general permit rule and that has expired and has been administratively extended, the information required under 327 IAC 15-3 shall be submitted to the commissioner within ninety (90) days of the effective date of this NPDES general permit rule, unless the commissioner determines that a later date is acceptable.

(b) For a person proposing a new discharge, the information required under 327 IAC 15-3 shall be submitted to the commissioner fifteen (15) days before the date on which the discharge is to commence as allowed in 327 IAC 15-3-3. (*Water Pollution Control Board; 327 IAC 15-12-6; filed May 25, 1994, 11:00 a.m.: 17 IR 2305*)

327 IAC 15-12-7 General conditions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 7. (a) A person regulated under this rule is authorized to discharge all wastewaters regulated under this rule through the outfalls identified in the NOI letter in accordance with this rule. Such discharge shall be limited and monitored as specified below:

Parameter	Daily	Daily	Weekly	Units	Measurement	Sample Type
	Minimum	Maximum	Average		Frequency	
Flow	Å	Report	Å	MGD	4XYearly	Instantaneous
TSS	Å	Å	30	mg/l	4XYearly	Grab
pH	6.0	9.0	Å	s.u.	4XYearly	Grab

(b) A person regulated under this rule shall comply with the following additional discharge requirements:

- (1) The discharge shall not cause excessive foam in the receiving waters.
- (2) The discharge shall be essentially free of floating and settleable solids.
- (3) The discharge shall not contain oil or other substances in amounts sufficient to create a visible film or sheen on the receiving waters.
- (4) The discharge shall be free of substances that are in amounts sufficient to be unsightly or deleterious or which produce color, odor, or other conditions in such a degree as to create a nuisance.

(c) A person regulated under this rule shall comply with the following sampling requirements:

- (1) Samples taken in compliance with the monitoring requirements in this section shall be taken at a point representative of the discharge but prior to entry into waters of Indiana.
- (2) The analytical and sampling methods used shall conform to the current version of 40 CFR 136 as referenced in 327 IAC 5-2-13(d)(1).
- (3) Samples and measurements taken as required in this section shall be representative of the volume and nature of the monitored discharge.

(d) A person regulated under this rule shall comply with the following reporting requirements:

- (1) Monthly discharge monitoring reports shall be submitted to the data management section at the address listed in 327 IAC 15-3-1, containing results obtained during the previous month and shall be postmarked no later than the twenty-eighth day of the month following each completed monitoring period. During a month in which no discharge occurs, a person regulated under this rule shall submit the report stating that no discharge occurred.

(2) For each measurement or sample taken pursuant to the requirements of this rule, the facility shall record the following information:

- (A) The exact place, date, and time of sampling.
- (B) The person(s) who performed the sampling or measurements.
- (C) The dates the analyses were performed.
- (D) The person(s) who performed the analyses.
- (E) The analytical techniques or methods used.
- (F) The results of all required analyses and measurements.

(3) Monitoring of any pollutant at the location(s) identified in the NOI letter more frequently than required under this rule, using approved analytical methods, the results of such monitoring shall be included in the calculation and reporting of the values required in the monthly discharge monitoring report. Such increased frequency shall also be indicated in this report.

(4) All records and information resulting from the monitoring activities required under this rule, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years. When the original records are kept at another location, a copy of all such records shall be kept at the facility. The three (3) year period shall be extended:

(A) automatically during the course of any unresolved litigation regarding the discharge of pollutants by the facility or regarding promulgated effluent guidelines applicable to the facility; or

(B) as requested by the regional administrator or the Indiana department of environmental management.

(Water Pollution Control Board; 327 IAC 15-12-7; filed May 25, 1994, 11:00 a.m.: 17 IR 2305)

327 IAC 15-12-8 Standard conditions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 8. In addition to the conditions set forth in this rule, the standard conditions for the NPDES general permit rule under 327 IAC 15-4 shall apply also to this rule. *(Water Pollution Control Board; 327 IAC 15-12-8; filed May 25, 1994, 11:00 a.m.: 17 IR 2306)*

327 IAC 15-12-9 Inspection and enforcement

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 9. (a) The commissioner and/or designated representative may inspect any facility regulated under this rule at any time.

(b) Any person violating any provision of this rule shall be subject to enforcement and penalty as set forth under 327 IAC 15-1-4. *(Water Pollution Control Board; 327 IAC 15-12-9; filed May 25, 1994, 11:00 a.m.: 17 IR 2306)*

327 IAC 15-12-10 Duration of coverage

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 10. Coverage under this rule is granted by the commissioner for a period of five (5) years from the date coverage commences. To obtain renewal of coverage under this general permit rule, the information required under 327 IAC 15-3 shall be submitted to the commissioner within ninety (90) days of the termination of coverage under this NPDES general permit rule, unless the commissioner determines that a later date is acceptable. *(Water Pollution Control Board; 327 IAC 15-12-10; filed May 25, 1994, 11:00 a.m.: 17 IR 2306)*

NOTICE OF INTENT APPLICATION



Indiana Department of Environmental Management
Notice of Intent (NOI)
Storm Water Runoff Associated with Construction Activity
NPDES General Permit Rule 327 IAC 15-5 (Rule 5)

Submission of this Notice of Intent letter constitutes notice that the operator is applying for coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit Rule for Storm Water Discharges Associated with Construction Activity (see 327 IAC 15-2-5 (c) for definition of operator). Permitted operators are required to comply with all terms and conditions of the General Permit Rule 327 IAC 15-5 (Rule 5).

Construction Project:

Name: _____ County: _____

SIC Code or Description of Project: _____

Location: _____

Operator/Developer Name: _____ Phone: _____

Company Name: _____

Complete Address: _____

Contact Person (if different from above; i.e. engineer): _____

Complete Address (if different from above): _____

Phone: _____

Affiliation with operator (i.e. consultant): _____

Ownership Status: (check one) Federal _____ State _____ Public (other than Federal or State) _____
Private _____ Other _____

Location: Latitude & Longitude _____ **Or** Quarter _____ Section _____
Township _____ Range _____

Name of Receiving Water (and if applicable, name of municipal operator of storm sewer): _____

Please note: Even if a retention pond is present on the property, the name of the nearest possible receiving water is required.

Acreage: Total acreage: _____ Acreage to be Disturbed: _____

Timetable: Start Date: _____ Estimated End Date for all
Land Disturbing Activity: _____

Please note: The operator is responsible for all construction activities within the boundaries of the project until all construction is complete. If individual lots are to be sold within a subdivision or commercial park, the operator should consider developing contractual agreements to bind lot buyers and builders to compliance with the Soil Erosion Control Plan established by the operator, and to indemnify the operator for any violations. An example of a contractual clause of this nature may be obtained by contacting IDEM, Office of Water Management, Rule 5 Desk at 317/ 232-8760.

Exclusions From Coverage Under this General Permit:

1. Storm water discharges excluded by any provision of 327 IAC 15-2-3.
2. Storm water discharges to waters designated as outstanding state resources listed in 327 IAC 2-1-2(3) or waters designated for exceptional use listed in 327 IAC 2-1-11(b).

Soil Erosion Control Plan Certification:

By signing this Notice of Intent letter, I, the operator, certify the following:

- A. The erosion control measures included in the Soil Erosion Control Plan comply with the requirements of 327 IAC 15-5-7 and 15-5-9 and the plan complies with applicable state, county, and local erosion control requirements;
- B. The erosion control measures will be implemented in accordance with the plan;
- C. The appropriate state, county, or local erosion control authority and the county Soil and Water Conservation District (SWCD) office have been sent a copy of the erosion control plan for review; and
- D. Implementation of the erosion control measures will be conducted by personnel trained in erosion control practices.

Operator Responsibility Statement:

By signing this Notice of Intent letter, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Operator _____ Date _____

In Addition to this Form, Completed in Full, Please Submit the Following:

- _____ Proof of publication in a newspaper of general circulation in the affected area notifying the public that a construction activity is to commence, including the start date, end date, and location of the project, and the name and address or phone number of the contact person;
- _____ \$100 check or money order payable to the Indiana Department of Environmental Management.

Mail to: Indiana Department of Environmental Management
Office of Water Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015
Attention: Permits Section, Storm Water Group

Questions regarding Erosion & Sediment Control Plan development or implementation may be directed to your local SWCD or Department of Natural Resources Office. Questions regarding the Notice of Intent may be directed to the Rule 5 contact person at 317/232-8760 or 800/451-6027. The NOI should be submitted only after your Soil Erosion Control Plan has been submitted to your local SWCD. Initiation of earth disturbing activity before submittal of the Erosion & Sediment Control Plan, the NOI, and the \$100 filing fee is considered operation without a permit and will potentially subject the operator to enforcement and penalty under IC 13-30.

2 end

APPLICABLE SPECIFICATIONS

SECTION 02110

SITE CLEARING AND GRUBBING

PART 1 - GENERAL

1.1. SECTION INCLUDES

- A. Clearing of site prior to grading. Removing trees and brush, and existing vegetation.
- B. Temporary stockpile, trees, brush, and vegetation on-site.
- C. Dispose of trees, brush, and vegetation at an off-site disposal facility unless otherwise directed by Owner.

1.2. UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Basis of Measurement: Site clearing by acre or part of acre.
- B. Basis of Payment: Includes initial clearing of site, temporary stockpiling of trees, brush, and vegetation, disposing of trees, brush, and vegetation.

1.3. QUALITY ASSURANCE

- A. CQA Engineer shall observe that the barrier wall and dewatering system alignments are cleared first and then that the remainder of the area of construction has been cleared.
- B. CQA Engineer shall observe and document that trees, brush, and vegetation have been properly disposed of.

PART 2 - PRODUCTS

2.1. EQUIPMENT

- A. Equipment determined necessary by Contractor to adequately clear the site.

PART 3 - EXECUTION

3.1. REMOVAL

- A. Clear and grub the barrier wall and dewatering system alignment first, prior to clearing and grubbing remaining area.

- B. Remove large trees, tree stumps and root systems in the project area.
- C. Remove brush and vegetation in the project area.
- D. Temporarily stockpile trees, brush, and vegetation on-site.
- E. Dispose of trees, brush, and vegetation off-site unless otherwise directed by Owner.

END OF SECTION

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SECTION 02210
SITE PREPARATION

PART 1 - GENERAL

1.1. SECTION INCLUDES

- A. Excavating and temporary stockpiling existing dredge spoils.
- B. Placement of silt fence around dredge spoils stockpiles.

1.2. RELATED SECTIONS

- A. Section 02110 - Site Clearing and Grubbing
- B. Section 02220 - Excavating, Backfilling, and Compacting
- C. Section 02276 - Silt Fence

1.3. UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Basis of Measurement: By cubic yard of existing dredge spoils excavated and stockpiled.
- B. Basis of Payment: Includes excavating and stockpiling existing dredge spoils.

1.4. QUALITY ASSURANCE

- A. CQA Engineer shall observe that all existing dredge spoils have been removed to the depths shown on drawings.
- B. CQA Engineer shall approve on-site stockpile locations.
- C. CQA Engineer shall observe that equipment used can achieve excavation and stockpiling.

PART 2 - PRODUCTS

2.1. MATERIALS

- A. Silt fence shall meet the specifications in Section 02276.

2.2. EQUIPMENT

- A. Equipment determined necessary by Contractor to excavate and stockpile existing dredge spoils.

PART 3 - EXECUTION

3.1. EXAMINATION

- A. CQA Engineer shall observe that all existing dredge spoils have been excavated and stockpiled at appropriate on-site locations.

3.2. MATERIAL PLACEMENT

- A. Install silt fence in accordance with Section 02276 - Silt Fence.
- B. Remove existing dredge spoils in the barrier wall alignment and the existing dredge spoils outside the barrier wall alignment.
- C. Stockpile existing dredge spoils removed, inside the barrier wall alignment footprint.
- D. After construction of the barrier wall and placement of GCL the stockpiled existing dredge spoils will be used in construction of the interior berm and the in-board portions of the perimeter berm.

3.3. QUALITY CONTROL AND QUALITY ASSURANCE

- A. CQA Engineer shall confirm that all existing dredge spoils have been excavated and stockpiled in an appropriate on-site location.
- B. CQA Engineer shall confirm that silt fence has been installed around stockpiles.
- C. Refer to Construction Quality Assurance Plan (CQAP) for additional information.

END OF SECTION

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SECTION 02220

EXCAVATING, BACKFILLING, AND COMPACTING

PART 1 - GENERAL

1.1. SECTION INCLUDES

- A. Excavating, backfilling, and compacting of pipe trenches
- B. Excavating and backfilling of existing dredge spoils.
- C. Excavating to base grades shown on drawings and compacting.
- D. Backfilling and compacting of swales, berms, infiltration basins and roadways.

1.2. RELATED SECTIONS

- A. Section 02610 – Underground Piping

1.3. UNIT PRICES - MEASUREMENT AND PAYMENT

A. Basis of Measurement

- 1. Pipe Trenches: by linear foot of pipe trench installed.
- 2. CAMU Units: by cubic yard of native material excavated as determined by before and after surveys and by in-place compacted cubic yard as determined by before and after surveys.
- 3. Swales, Berms, Infiltration Basins, and Roadways: by in-place compacted cubic yard as determined by before and after surveys.

B. Basis of Payment

- 1. Pipe Trenches: includes excavating, placing, and compacting of backfill.
- 2. CAMU Units: includes excavating, compacting smooth drum rolling, and grading to the lines and grades shown on drawings.
- 3. Swales, Berms, Infiltration Basins, and Roadways: includes excavating, compacting, and grading to the lines and grades shown on the drawings.

1.4. DEFINITIONS AND REFERENCES

- A. ASTM C136-Method for Sieve Analysis of Fine and Coarse Aggregates.
- B. ASTM D422 - Standard Test Method for Particle-Size Analysis of Soils.
- C. ASTM D1557 - Test Method for Laboratory Compaction Characteristics of Soil using Modified Effort (56,000 ft-lbf/ft³ (2,700 KN-m/m³)).
- D. ASTM D2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- E. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

1.5. QUALITY ASSURANCE

- A. CQA Engineer shall confirm that CAMU Units, swales, berms, infiltration basins, and roadways are excavated to the lines and grade shown on drawings.
- B. CQA Engineer shall observe that general fill material is placed and compacted to the proper density.

PART 2 - PRODUCTS

2.1. MATERIALS

- A. Select Granular Fill (Pipe Bedding)
 - 1. Select granular fill (for bedding) is defined with a maximum P200 content of 20% and greater than 90% passing the No. 4 U.S. sieve size. Generally classified as sand.
- B. Plastic warning ribbon above pipe trenches/excavations
 - 1. Plastic warning ribbon shall be 3 in. wide, color-yellow.

2.2. EQUIPMENT

- A. Vibratory padfoot compactor, or as appropriate.
- B. Hand compaction equipment for compacting fill around penetrations and trenches.
- C. Smooth drum roller.

PART 3 - EXECUTION

3.1. PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Protect bench marks and survey layout stakes from excavation equipment and vehicular traffic.
- C. Pipe construction shall be as specified in Section 02610 – Underground Piping.

3.2. EXCAVATION OF PIPE TRENCHES AND CAMU UNITS

- A. Excavate to the lines and grades shown on the Drawings.
- B. Abide by all OSHA excavation and trenching regulations, and pertinent other Federal, State, and Local requirements.
- C. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- D. Notify CQA Engineer of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.
- E. Remove unstable material and replace with general fill, as directed by CQA Engineer.
- F. Correct unauthorized excavation at no extra cost to the Owner.
- G. Correct areas over-excavated by error at no additional cost to the Owner.
- H. Smooth drum roll the base of the CAMU Units, prior to installing the GCL.

3.3. PREPARATION FOR BACKFILL

- A. Compact subgrade to density requirements specified.
- B. Undercut soft areas within trenches by a minimum of 6 in. and backfill with select granular fill. Compact to a density equal to or greater than the requirements specified.

3.4. BACKFILLING

- A. Backfill areas to required contours and elevations with unfrozen materials.

- B. Do not backfill over standing water, or frozen, or spongy, subgrade surfaces.
 - C. Pipe bedding:
 - 1. Spade or shovel-slice pipe bedding material under the pipe haunches.
 - 2. Place pipe and bedding to depth shown on the Drawings.
 - 3. Backfill with remaining specified material above pipe bedding.
 - D. Compact backfill material for berms, swales, infiltration basins, and roadways to a minimum of 90% of the Modified Proctor maximum dry density.
 - E. Maintain optimum moisture content of backfill materials to attain required compaction density.
 - F. Make grade changes gradual. Blend slope into level areas. Maintain positive drainage and control erosion.
- 3.5. RESTORATION
- A. Restore site surfaces for positive drainage.
- 3.6. TOLERANCES
- A. Construct backfilled trenches to tolerance of plus 2 in.
 - B. Construct backfilled open areas, drainage swales and berms to tolerance of plus 3 in.
 - C. Construct CAMU Units 1 and 2 excavations to tolerance of minus 2 inches.
- 3.7. FIELD QUALITY CONTROL
- A. Field observation and testing shall be performed by CQA Engineer.
 - B. CQA Engineer shall confirm compactive effort used for construction of the perimeter and interior berms, swales, infiltration basins, and roadways backfill material every 100 linear foot for each 1-ft thickness placed. Compactive effort shall be tested using nuclear methods (ASTM D2922 and D3017).
 - C. CQA Engineer shall obtain representative bag samples of both native material and material imported from off-site every 5,000 cy place for grain-size distribution (ASTM D422) and moisture-density relationship (ASTM D1557).

- D. The CQA Engineer shall approve grades by survey on a minimum 100-ft grid including the highs and lows within the base and sidewalls of the CAMU Units and on a 100 lineal foot basis for berms, roads, and swales.
- E. Refer to Construction Quality Assurance Plan (CQAP) for additional information.

END OF SECTION

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SECTION 02225

TOPSOIL

PART 1 - GENERAL

1.1. SECTION INCLUDES

- A. Supplying hauling, placing, and grading topsoil layer on outboard perimeter berm, drainage swales, and infiltration basins.

1.2. UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Basis of Measurement: By in-place cubic yard of topsoil as determined by before and after survey at locations shown on the Drawings, and/or indicated by the CQA Engineer. A licensed surveyor shall be used to determine the elevations of the topsoil.
- B. Basis of Payment: Includes supplying, hauling, placing, and grading of topsoil within the construction limits.

1.3. DEFINITIONS AND REFERENCES

- A. Topsoil material is an organic soil capable of supporting vegetation.
- B. ASTM D422 - Standard Method for Particle-Size Analysis of Soils.

1.4. QUALITY ASSURANCE

- A. Refer to Construction Quality Assurance Plan (CQAP) for additional information.

PART 2 - PRODUCTS

2.1. SOURCE OF MATERIAL

- A. Topsoil shall be provided from an approved off-site borrow area. The CQA Engineer shall approve the topsoil.

2.2. EQUIPMENT

- A. Equipment determined necessary by Contractor to achieve placement.
- B. Rock picker to remove stones larger than 2 inches in diameter.

PART 3 - EXECUTION

3.1. MATERIAL PLACEMENT

- A. Place and grade topsoil in one loose lift to a minimum thickness of 6 inches as shown on Drawings.
- B. Use a rock picker to remove stones larger than 2 inches in diameter.
- C. Do not compact topsoil.

3.2. TOLERANCES

- A. Spread topsoil layer to within thickness tolerance of plus 2 inches.

3.3. FIELD QUALITY CONTROL

- A. CQA Engineer shall document the top of topsoil grades by survey on a maximum 100-ft grid.
- B. Refer to Construction Quality Assurance Plan (CQAP) for additional information.

END OF SECTION

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SECTION 02270

SLOPE PROTECTION AND EROSION CONTROL

PART 1-GENERAL

1.1. SECTION INCLUDES

- A. Supply and install temporary erosion control mat along surface water drainage swales and infiltration basins.
- B. Supply and install or construct temporary and permanent erosion control devices or structures, such as mats, fences, screens, ditch checks, riprap, or other devices, required to control erosion and sediment transport within the limits of construction and to prevent sediment from leaving the limits of construction.

1.2. RELATED SECTIONS

- A. 02225 - Topsoil
- B. 02936 - Seed, Fertilizer, and Mulch
- C. 02276 -Silt Fence
- D. 02720 - Storm Drainage Structures and Corrugated Pipe

1.3. UNIT PRICE-MEASUREMENT AND PAYMENT

- A. Basis of Measurement: Erosion Control Mat by square yard installed. Riprap by ton installed. Geotextile under riprap at culvert structures is considered incidental to this unit item.
- B. Basis of Payment: Includes supplying and installing erosion control mat; and supplying and hauling riprap and other temporary control devices necessary.

1.4. DEFINITIONS AND REFERENCES

- A. ASTM D3786 - Standard Test Method for Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics - Diaphragm Bursting Strength Tester Method.
- B. ASTM D4355 - Standard Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus).
- C. ASTM D4533 - Standard Test Method for Trapezoid Tearing Strength of Geotextiles.

- D. ASTM D4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
- E. ASTM D4751 - Standard Test Method for Determining Apparent Opening Size of a Geotextile.
- F. ASTM D4833 - Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products.

1.5. SUBMITTALS

- A. A list of geotextile minimum average roll values shall be submitted to CQA Engineer. Material properties shall be in conformance with those defined in Part 2. Any deviation shall be documented.

1.6. TRANSPORTATION, HANDLING, AND STORAGE

- A. During shipment and storage, geotextile shall be wrapped in relatively impermeable and opaque protective covers.
- B. Storage area shall be such that geotextile is protected from mud, dirt, dust, debris, moisture, and exposure to sunlight and heat.
- C. Handling, storage, and care of geotextile and erosion control mat on site is responsibility of the Contractor prior to, during, and after their installation. The Owner or Owner's representative shall provide adequate storage space on site. Contractor shall be liable for all damages to geotextile or erosion control mat prior to final acceptance of installation by the Owner or Owner's representative, except for those due to negligent actions on part of the Owner or Owner's representative.

PART 2 - PRODUCTS

2.1. EROSION CONTROL MAT

- A. Provide erosion control mat that is completely biodegradable and approved by CQA Engineer.

2.2. EROSION CONTROL GEOTEXTILE

- A. Provide a nonwoven product comprised of polyester or polypropylene. Geotextile properties shall meet the following minimum average roll values in the weakest principal direction:

EROSION CONTROL GEOTEXTILE PROPERTIES

<u>Property</u>	<u>Units</u>	<u>Value</u>	<u>Test</u>
Apparent Opening Size	N/A	No. 50	ASTM D4751
Grab Strength	lb	180	ASTM D4632
Elongation	%	15	ASTM D4632
Trapezoidal Tear	lb	50	ASTM D4533
Puncture Strength	lb	75	ASTM D4833
Burst Strength	psi	290	ASTM D3786
UV Resistance retained after 500 h exposure	% Strength	70	ASTM D4355

- B. Geotextile shall be free of defects, rips, holes, or flaws.
- C. Geotextile shall be manufactured in widths and lengths that will permit installation with as few laps as possible.
- D. Geotextile shall be marked with Manufacturer's name, product identification, lot number, roll number, and roll dimensions.
- E. Securing pins, if used, shall be 3/16 in. diameter, steel, pointed at one end, and fabricated with a head to retain a steel washer having an outside diameter of no less than 1.5 in. Length of pins shall not be less than 4 in.

2.3. RIPRAP

- A. Stone for riprap shall be durable field or quarry stone of approved quality. It shall be sound, hard, dense, resistant to the action of air and water, and free from seams, cracks, or other structural defects.
- B. Stone pieces for riprap shall be of a size and shape approved by the CQA Engineer and, except for those used for chinking, shall range in weight from approximately 25 to 150 lb, with not less than approximately 50% of the pieces weighing more than 60 lb.

PART 3 - EXECUTION

3.1. EXAMINATION

- A. CQA Engineer shall observe surface of topsoil on berms and in swales to confirm that graded surface is adequate to allow erosion control mat installation.

3.2. EROSION CONTROL MAT INSTALLATION

- A. Install erosion control mat in accordance with recommendations provided by Manufacturer and/or Supplier.
- B. Place immediately after completed seeding operations.
- C. Remove all stones, or clods greater than 1-1/2 in. diameter and all roots, sticks and other foreign matter prior to placing mat.
- D. Press all small stones or clods, which prevent contact of mat with soil, into the soil with a small lawn type roller.
- E. Press lateral edges of mat into soil to allow water to run over it.
- F. Reseed, as specified for the original seedings, any damaged or destroyed seeded areas during mat installation.
- G. Uniformly apply water to sufficiently moisten the seedbed to a depth of 2 in. and in a manner to preclude washing or erosion after placing mat.
- H. Erosion control mat overlap and spacing of pins or staples shall be at the manufacturer's or supplier's recommendations.

3.3. EROSION CONTROL GEOTEXTILE PLACEMENT AND HANDLING

- A. Contractor shall handle geotextile in such a manner as to ensure it is not damaged in any way.
- B. Geotextile shall be placed loosely and laid parallel to the direction of water movement. All stones, roots, sticks, and other foreign material which would interfere with the geotextile being completely in contact with soil shall be removed prior to placing geotextile.
- C. Geotextile shall be completely covered with a minimum 6-in. thick layer of earthen material or 12-in. thick layer of riprap within 20 days of removing protective wrapping from geotextile.

- D. Provide a minimum of 2 ft of overlap between adjacent segments of geotextile. Lap upslope segments over downslope segments.
- E. Any holes or tears in geotextile shall be repaired with a patch made from the same geotextile material, extending a minimum of 3 ft beyond the edge of defect in all directions.
- F. Contractor shall place all earthen materials, such as riprap, located on top of geotextile in such a manner as to ensure no damage of geotextile. In no case shall height of riprap freefall exceed 1 ft.

3.4. RIPRAP PLACEMENT

- A. Riprap shall be placed on top of erosion control geotextile.
- B. Place riprap by hand or with minimal machine work so that stones are close together.
- C. Firmly bed riprap into slope and against adjoining stones.
- D. Place larger stones in lower courses.
- E. Place stones perpendicular to slopes with ends in contact with each other.
- F. Fill spaces between stones with chinks or spalls.
- G. Riprap shall be at least 12-in. thick, for culvert inlets and outlets, and at least 6 in. thick for daylighting of geonet measured perpendicular to slope.
- H. Finished surface shall be even and tight.

3.5 FIELD QUALITY CONTROL

- A. CQA Engineer shall confirm placement of erosion control mat and erosion control measures.
- B. See Construction Quality Assurance Plan (CQAP) for additional information.

END OF SECTION

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SECTION 02276

SILT FENCE

PART 1 - GENERAL

1.1. SECTION INCLUDES

- A. Supply, install, maintain, and remove silt fence.

1.2. RELATED SECTIONS

- A. 02270 – Slope Protection and Erosion Control
- B. 02220 – Excavating, Backfilling, and Compacting

1.3. UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Basis of Measurement: Silt fence by lineal foot installed.
- B. Basis of Payment: Includes supplying, installing and maintaining silt fence.

1.4. DEFINITIONS AND REFERENCES

- A. ASTM D4355 - Standard Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon - Arc Type Apparatus).
- B. ASTM D4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
- C. ASTM D4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
- D. ASTM D4751 - Standard Test Method for Determining Apparent Opening Size of a Geotextile.

PART 2 - PRODUCTS

2.1. MATERIALS

- A. Silt fence shall consist of woven geotextile secured to 4-ft long, 1-½ in. by 1-½ in. hardwood posts on 7-ft centers with tension nylon cording and reinforcing net.
- B. Woven geotextile properties shall meet the following minimum average roll values:

<u>Property</u>	<u>Units</u>	<u>Value</u>	<u>Test</u>
Tensile Strength	lb	90	ASTM D4632
Apparent Opening Size (AOS)	NA	No. 20	ASTM D4751
Permittivity	sec ⁻¹	0.01	ASTM D4491
Ultraviolet Degradation	% strength retained after 500 h exposure	70	ASTM D4355

- C. Reinforcing net shall be industrial polypropylene with maximum mesh spacing of 3/4 in.
- D. Wire staples shall be 1.5 in. minimum length No. 9 staples.

PART 3 - EXECUTION

3.1. INSTALLATION

- A. Install silt fence around all drainage outlets and around the limits of construction as shown on the Drawings.
- B. Dig a 6 in. by 6 in. trench at these locations.
- C. Drive hardwood posts 12 in. deep, 7-ft centers, below base of trench on the downslope of the trench.
- D. Securely fasten the tension nylon cording and reinforcing net to the posts.
- E. Stretch geotextile tight between posts.
- F. Staple geotextile to posts with wire staple.
- G. Drop geotextile in trench and cover with excavated soils and compact.

3.2. MAINTENANCE

- A. Inspect silt fence after every rainfall event.
- B. Correct any deficiencies.
- C. Remove excessive sediment deposits as determined by CQA Engineer.
- D. Replace damaged silt fence at no cost to the Owner. CQA Engineer shall determine damaged silt fence.

3.3 FIELD QUALITY CONTROL

- A. CQA Engineer shall confirm proper placement of silt fence.
- B. See Construction Quality Assurance Plan (CQAP) for more information.

END OF SECTION

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SECTION 02505

COARSE AGGREGATE

PART 1 - GENERAL

1.1. SECTION INCLUDES

- A. Compacted crushed coarse aggregate as base course and surface course materials for access roads and building access areas.

1.2. RELATED SECTIONS

- A. Section 02220 – Excavating, Backfilling, and Compacting

1.3. UNIT PRICE - MEASUREMENT AND PAYMENT

A. Basis of Measurement

- 1. By in-place cubic yard of base course and surface course material for access roads and building access areas as determined by before and after survey.

B. Basis of Payment

- 1. Includes supplying, placing, and compacting base course and surface course material for access roads.
- 2. Manhole and building access area may require some subbase fill and/or grading.

1.4. DEFINITIONS AND REFERENCES

- A. ASTM C136 - Standard Method for Sieve Analysis of Fine and Coarse Aggregates.
- B. ASTM D1557 - Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).

1.5. SUBMITTALS

- A. Provide CQA Engineer with written documentation that crushed coarse aggregate used for access areas meets the material specifications in Part 2.

1.6. QUALITY ASSURANCE

- A. General: Provide a smooth final surface of uniform density conforming to required grade and cross section.

- B. Density: Compact the subgrade to a minimum of 90% modified Proctor maximum dry density.
- C. Aggregate Thickness
 - 1. Construct to compacted thickness as indicated on Drawings, or as directed by the CQA Engineer.
 - 2. Thickness deficiency greater than ½ in. shall be corrected by placing additional crushed aggregate.
- D. Surface Smoothness
 - 1. Check surface smoothness at intervals directed by CQA Engineer.
- E. Testing to confirm crushed aggregate thickness, line, grade, gradation, soundness, abrasion resistance, and/or degree of compaction may be performed at the discretion of the CQA Engineer.

PART 2 - PRODUCTS

2.1 SOURCE OF MATERIAL

- A. Crushed coarse aggregate shall be provided from off-site source. The CQA Engineer shall approve the material.

2.2 SURFACE AND BASE COURSE MATERIAL

- A. Base course material shall consist of nominal 1-2 in. diameter stone meeting the requirements of Indiana Department of Transportation (INDOT) Division of Contracts and Construction Standards Section 904.02(e) coarse aggregate No. 2.
- B. Surface coarse material shall consist of nominal ¾ in. diameter stone with fines, meeting the requirements of INDOT Division of Contracts and Standard Specifications Section 904.02(e) coarse aggregate No. 53.

2.3 EQUIPMENT

- A. Equipment determined necessary by Contractor to achieve placement.

PART 3 - EXECUTION

3.1. LINES AND GRADE

- A. The lines, grade, and cross section shall be constructed as shown on the Drawings or as directed by the CQA Engineer.

3.2. EXAMINATION

- A. CQA Engineer shall confirm that compacted general fill is firm and ready to receive work by visual observation during proof-rolling.

3.3. SURFACE PREPARATION

- A. Fill any ruts or depressions prior to aggregate placement.
- B. Grade for positive drainage.
- C. Install reinforcing geotextile on prepared subgrade.

3.4. PLACEMENT OF CRUSHED AGGREGATE PAVING

- A. Place base course and surface course aggregate over reinforcing geotextile to a total thickness as indicated on Drawings.
- B. Construct roads and access areas to the lines and grades shown on Drawings.
- C. Compact placed aggregate material to a minimum of 90% of the modified Proctor (ASTM D1557) maximum dry density to full depth. Segregation of material shall not be permitted.
- D. Add water if required to assist compaction. If there is excess water, rework topping and aerate to reduce moisture content.
- E. Perform hand tamping in areas inaccessible to self-propelled or tow-behind compaction equipment.
- F. Do not place crushed aggregate on frozen general fill or general fill covered with ice or snow.
- G. Do not place crushed aggregate on excessively wet general fill.
- H. Do not place crushed aggregate on dry and dusty general fill. Excessively dry general fill shall be watered, and reworked or recompacted, if necessary.

3.5. TOLERANCES

- A. Access areas shall be constructed to a thickness tolerance of plus 2 in.

3.6. QUALITY CONTROL

- A. CQA Engineer shall confirm compactive effort used for base and surface course placed a minimum of every 100 linear foot for each 1-ft thickness placed. Compactive effort shall be tested using nuclear methods (ASTM D2922 and D3017).
- B. CQA Engineer shall collect samples of crushed aggregate for grain-size distribution (ASTM D422) and moisture density relationship (ASTM D1557) every 5,000 cy placed.
- C. CQA Engineer shall document the top of base course by survey at a minimum every 100 linear foot.
- D. See Construction Quality Assurance Plan (CQAP) for more information.

END OF SECTION

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SECTION 02605

CONCRETE MANHOLES

PART 1 - GENERAL

1.1. SECTION INCLUDES

- A. Provide and install precast concrete manhole sections, jointing materials, base, top adjusting rings, connections, epoxy coatings, castings, and appurtenances for manhole.
- B. Provide and install GCL secondary containment for leachate collection manholes.
- C. Provide and install sump pumps, piping, floats, control system, and other appurtenances where applicable.

1.2. RELATED SECTIONS

- A. Section 02220 - Excavating, Backfilling, and Compacting
- B. Section 02772 - Geosynthetic Clay Liner (GCL)
- C. Section 16000 - Electrical Requirements
- D. Section 16900 - Instrumentation and Control Systems

1.3. UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Basis of Measurement: Manhole by lump sum.
- B. Basis of Payment: Supply and install manhole, sump, pumps, piping, floats, control system, and other appurtenances.

1.4. DEFINITIONS AND REFERENCES

- A. Precast Concrete Manholes and Adjusting Rings: ASTM C 478 Standard Specification for Precast Reinforced Concrete Manhole Sections.
- B. Castings: ASTM A 48 Grade 30 Specifications for Gray Iron Castings.
- E. Rubber Gaskets: ASTM C 443 Standard Specifications for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.

- F. Flexible Plastic Gaskets: Type B AASHTO M 198 Specification for Joints for Circular Concrete Sewer and Culvert Pipe Using Flexible Watertight Gaskets, Type B Flexible Plastic Gaskets.

1.5 SUBMITTALS

- A. Submit product data to CQA Engineer at least ten days prior to installation.
- B. Submit documentation from supplier that documents that the installed pump, switches, floats, controls, and seals all conform to state and national electrical codes.

1.6 QUALITY ASSURANCE

- A. All pipe, fittings, valves and related equipment shall be new and unused.
- B. Each length of pipe and equipment shall be clearly marked with Manufacturer's name, the type and class of pipe.
- C. A guarantee of one year after acceptance by Owner or Owner's representative of all equipment, materials, and workmanship to be free from defect and that the system will operate without excessive noise, vibration, or uncontrolled expansion.

PART 2 - PRODUCTS

2.1. ACCEPTABLE MANUFACTURERS

- A. Castings:

Neenah Foundry Company
P.O. Box 729
Neenah, Wisconsin 54956

- B. Epoxy Coating:

Koppers Company, Inc.
Pittsburgh, Pennsylvania 15219

Glidden Coatings & Resins, Architectural & Maintenance
Cleveland, Ohio 44415

2.2. MATERIALS

A. Precast Concrete Manhole:

1. Manhole Base: Precast concrete complying with ASTM C478 standards specifications for precast reinforced concrete manhole sections, or cast-in-place as shown on the Drawings.
2. Joints: Gasketed and damp-proofed on exterior.
3. Pipe connections: Core and boot seals and epoxy grout.
4. Epoxy coating on interior.

B. Manhole Castings: Type and model as shown on the Drawings.

C. Mortar: Three parts masonry sand and one part Portland Cement by volume.

D. Epoxy Coating: Coal tar epoxy protective coating designed for immersion, interior or exterior exposures, and corrosion resistance.

E. Geosynthetic Clay Liner (GCL): As specified in Section 02772 – GCL for secondary containment around leachate collection manholes.

F. Groundwater Collection Manhole Pump Systems.

1. Two submersible pumps as approved by CQA Engineer, for groundwater collection manhole.
2. Capable of pumping groundwater from the manhole to Outfall 32, as shown on the Drawings.
3. A check valve and isolation valve.
4. The manhole pump and associated equipment shall be supplied by a supplier as approved by CQA Engineer.
5. Piping shall contain a monitoring port for sampling.

G. Leachate Collection Manhole Pump Systems

1. One submersible pump as approved by CQA Engineer, for each leachate collection manhole.

2. Capable of pumping leachate from the manhole to the Project Specific Wastewater Treatment Plant, as shown on the Drawings.
3. A check valve and isolation valve.
4. The manhole pump and associated equipment shall be supplied by a supplier as approved by CQA Engineer.
5. Piping shall contain a monitoring port for interstitial monitoring.

H. Electrical Controls

1. The manhole pumps will be operated by electrical power and controls in the main control panel.
2. The liquid volume pumped from manholes shall be metered using a pump stroke (cycle) counter and the valve maintained at the manhole.
3. High level floats shall be installed to activate/deactivate pump(s) as shown on Drawings.
4. The electrical and control system logic for the complete manhole pump system should be based on the following:
 - a. The dewatering system manhole has four floats (pump off, single pump on, both pumps on, high level alarm).
 - b. The leachate collection system manholes have three floats (pump off, pump on, high level alarm).
 - c. A high level alarm in the manhole must shut-off pumps supplying groundwater/leachate to the manhole.
 - d. A control/alarm system shall be included to notify operating personnel of the following conditions:
 - 1) Power failure.
 - 2) Dewatering system manhole high-level alarm.
 - 3) Leachate system manholes high-level alarm.
- c. Primary electrical service is 480-volt, 3-phase, 4-wire.

PART 3 - EXECUTION

3.1. PREPARATION

- A. Excavate and backfill in accordance with this section and Section 02220.

3.2. INSTALLATION

- A. Connect pipes to manholes at inverts shown on Drawings.
- B. Pipe Connection: Provide smooth, watertight connection of mortar or sealed flexible pipe boot around pipe.
- C. Apply epoxy coating to interior surfaces of manhole, comply with manufacturer's instructions.
- D. Install GCL secondary containment around leachate collection manholes as shown on Drawings.

3.3. ADJUSTING CASTING

- A. Provide minimum of 12 in. of precast concrete, adjusting rings, maximum of 18 in. of adjustment.
- B. Provide full 3/8-in. thick mortar beds for setting rings and casting.
- C. Apply plaster coat of mortar to inner and outer surface of adjusting rings.
- D. Install pump, piping, and accessories to provide for removal of pump for maintenance without entering the manhole.
- E. Install equipment according to manufacturer's recommended instructions.
- F. Backfill with native material in accordance with Section 02505.

3.4. FIELD QUALITY CONTROL

- A. Check, align, inspect complete manhole pump system before start-up.
- B. Start-up and field test the completed installation prior to final acceptance by CQA Engineer.
- C. See Construction Quality Assurance Plan (CQAP) for more information.

END OF SECTION

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SECTION 02610

UNDERGROUND PIPING

PART 1 - GENERAL

1.1. SECTION INCLUDES

- A. Supplying, installing, and testing dewatering system and leachate forcemains, leak detection piping and leachate collection piping, including all necessary fittings.

1.2. RELATED SECTIONS

- A. Section 02220 - Excavating, Backfilling and Compacting

1.3. UNIT PRICES - MEASUREMENT AND PAYMENT

- A. Basis of Measurement: By linear foot installed. Bedding, cleanouts and fittings are considered incidental to the price.
- B. Basis of Payment: Supplying, and installing dewatering system and leachate forcemains, leak detection and leachate collection piping.

1.4. DEFINITIONS AND REFERENCES

- A. ASTM D1785 - Specifications for Rigid Poly Vinyl Chloride (PVC) Plastic Pipe. Schedules 40, 80, and 120.
- B. ASTM D2464 - Threaded Poly Vinyl Chloride (PVC) Plastic Pipe Fittings. Schedule 80.
- C. ASTM D2467 - Socket-type Poly Vinyl Chloride (PVC) Plastic Pipe Fittings. Schedule 80.
- D. ASTM D3350, PE 34543C - Polyethylene Plastic Pipe and Fittings Materials. HDPE Pipe and Fittings.
- E. ASTM D1248 PE 3408 - Polyethylene Plastic Moldings and Extrusion Materials. HDPE Pipe and Fittings.
- F. ASTM D3261 - Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing.

1.5. QUALITY ASSURANCE

- A. All pipe, fittings, valves and related equipment shall be new and unused.
- B. Each length of pipe shall be clearly marked with Manufacturer's name, the type and class of pipe.
- C. A guarantee of one year after acceptance by Owner of all equipment, materials, and workmanship to be free from defect and that the system will operate without excessive noise, vibration, or uncontrolled expansion.
- D. Replacement or repair shall be at no cost to Owner.

PART 2 - PRODUCTS

2.1. MATERIALS

- A. Dewatering system and leachate forcemains, leak detection and leachate collection piping.
 - 1. Leak detection and leachate collection pipe shall be 6-in. diameter Schedule 120 polyvinyl chloride (PVC) with 3/8 in. diameter perforated holes as detailed on Drawings.
 - 2. Leak detection and leachate collection cleanout risers shall be 6 in. diameter Schedule 120 PVC non-perforated pipe.
 - 3. Leachate forcemain pipe shall be 3-in. diameter HDPE SDR 11 as detailed on Drawings.
 - 4. Dewatering system forcemain lateral shall be 2-in. diameter HDPE SDR 11 (EW02 through EW07) and 3-in. diameter HDPE SDR11 (EW08 and EW09) as detailed on Drawings.
 - 5. Dewatering system forcemain header shall by 6-in. diameter HDPE SDR 11 as detailed on Drawings.
 - 6. Leak detection and leachate collection sump sideslope risers shall be 18-in. diameter HDPE SDR 11 as detailed on Drawings.
- B. Pipe Bedding Material
 - 1. Pipe bedding material shall be as specified in Section 02220 - Excavating, Backfilling, and Compacting.

PART 3 - EXECUTION

3.1. EXAMINATION

- A. CQA Engineer shall document that pipe, fittings, and valves are suitable for installation.

3.2. INSTALLATION

- A. Dewatering system and leachate forcemains, leak detection and leachate collection piping shall be installed as shown on the Drawings.
- B. Construct trenches as specified in Section 02220 - Excavating, Backfilling, and Compacting.

3.3. TOLERANCES

- A. Pipe inverts shall be installed to a tolerance of plus 0.10 ft

3.4. FIELD QUALITY CONTROL

- A. CQA Engineer may collect samples of pipe bedding for laboratory testing.
- B. CQA Engineer shall document pipe inverts by survey at all pipe connections and at other locations as appropriate.
- C. Prior to, and after installation and backfill, all sections of non-perforated piping and related equipment shall be pressure tested under the supervision of the CQA Engineer.
 - 1. Contractor shall supply all gauges, pumps, pipe, connections, and other apparatus necessary to conduct tests.
 - 2. Notice CQA Engineer 48 hours prior to performing tests.
 - 3. Perform leakage and pressure tests in presence of CQA Engineer
 - 4. Apply a pressure of 3.0 psi to valves, header risers/cleanouts, pipe connection manholes and collection manholes for 30 minutes.
 - 5. Apply a pressure of 75 psi to dewatering forcemain lateral and header, and leachate system forcemain header, piping for 30 minutes.

6. Pressure should not drop in 30 minutes in order to be accepted by CQA Engineer.
7. If tests fail, Contractor shall make necessary repairs and repeat tests, as required until satisfactory results are obtained.
8. CQA Engineer shall prepare written report of each test to be signed by Contractor.

D. See Construction Quality Assurance Plan (CQAP) for more information.

END OF SECTION

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SECTION 02720

STORM DRAINAGE STRUCTURES AND CORRUGATED PIPE

PART 1 - GENERAL

1.1. SECTION INCLUDES

- A. Supply and install drainage pipe as shown on Drawings.

1.2. RELATED SECTIONS

- A. Section 02220 - Excavating, Backfilling, and Compacting
- B. Section 02225 - Topsoil
- C. Section 02270 - Slope Protection and Erosion Control

1.3. UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Basis of Measurement: Drainage system pipe by linear foot. Downslope flume by lump sum.
- B. Basis of payment: Excavation, materials, and backfill of pipe shown on Drawings.

1.4. DEFINITIONS AND REFERENCES

- A. American Association of State Highway and Transportation Officials (AASHTO).
- B. ASTM D1557 - Test Method for laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700kN-m/m³)).
- C. ASTM D2922 - Test methods for Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth).
- D. ASTM D3017 - Test Method for Water Content of Soil and Rock in Place by Nuclear method (Shallow Depth).

1.5. SUBMITTALS

- A. Pipe certification of quality by manufacturer shall be delivered to the Owner at least ten days prior to installation.

1.6. QUALITY ASSURANCE

- A. Quality assurance shall be as approved by CQA Engineer.

PART 2 - PRODUCTS

- A. Supply corrugated PE pipe (CMP) conforming to AASHTO specifications and local standards.
- B. Soil material in accordance with the materials as specified in Section 02220 - Excavating, Backfilling, and Compacting.

PART 3 - EXECUTION

3.1. INSTALLATION

A. PIPE TRENCHES

1. Install pipes to the lines and grades shown on the drawings.
2. Construct trenches as specified in Section 02220 - Excavating, Backfilling, and Compacting.

3.2. TOLERANCES

- A. Pipe inverts shall be installed to design elevation tolerance plus or minus 2 in.

3.3. FIELD QUALITY CONTROL

- A. CQA Engineer shall document installed CMP inverts by survey.
- B. See Construction Quality Assurance Plan (CQAP) for more information.

END OF SECTION

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SECTION 02733

PE MANHOLE

PART 1 - GENERAL

1.1. SECTION INCLUDES

- A. Supply and install PE pipe connection and storm water manholes complete with sump pipe, piping, and other appurtenances.

1.2. RELATED SECTIONS

- A. Section 02220 - Excavating Backfilling, and Compacting
- B. Section 02610 - Underground Piping

1.3. UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Basis of Measurement
 - 1. PE Manhole by lump sum installed.
- B. Basis of Payment
 - 1. Supply and install sump pipe, piping, and other appurtenances including excavation and backfill.

1.4. SUBMITTALS

- A. Submit product data to CQA Engineer at least ten days prior to installation.

1.5. QUALITY ASSURANCE

- A. All pipe, fittings, valves and related equipment shall be new and unused.
- B. Each length of pipe and equipment shall be clearly marked with Manufacturer's name, the type and class of pipe.
- C. A guarantee of one year after acceptance by Owner of all equipment, materials, and workmanship to be free from defect and that the system will operate without excessive noise, vibration, or uncontrolled expansion.

PART 2 - PRODUCTS

2.1. MATERIALS

- A. PE Storm Water Manholes shall be SDR-11 HDPE 36-in. diameter pipe and as shown on the Drawings.
- B. PE pipe connection manholes shall be SDR-11 HDPE with dimensions as shown on drawings.

PART 3 - EXECUTION

3.1. PREPARATION

- A. Excavate and backfill in accordance with this section and Section 02220.

3.2. INSTALLATION

- A. Install PE manhole and accessories to the lines and grades shown on the drawing.
- B. Backfill with coarse aggregate surface course material in accordance with Section 02505.

3.3. INSPECTION

- A. Check, align, inspect completed manhole.
- B. Survey pipe connections and other appropriate locations.

END OF SECTION

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SECTION 02936

SEED, FERTILIZER, AND MULCH

PART 1 - GENERAL

1.1. SECTION INCLUDES

- A. Preparing topsoil, fertilizing, seeding, and mulching topsoiled areas on all disturbed portions of the project area from the top of the perimeter berm outboard slopes to the property line.

1.2. RELATED SECTION

- A. Section 02225 - Topsoil

1.3. UNIT PRICE-MEASUREMENT AND PAYMENT

- A. Basis of Measurement: Seed, fertilizers, and mulch by the square yard.
- B. Basis of Payment: Includes preparing topsoil, fertilizing, seeding, and mulching areas designated for seeding.

1.4. DEFINITIONS AND REFERENCES

- A. Fertilizer: Organic or chemical additive to topsoil.
- B. Lime: Agricultural limestone additive to topsoil.
- C. Mulch: Organic additive to or over topsoil.
- D. Topsoil: as defined in Section 02225 - Topsoil.

1.5. QUALITY ASSURANCE

- A. Provide seed in containers showing percentage of each seed type, year of production, net weight, date of packaging, and location of packaging.

1.6. DELIVERY AND STORAGE

- A. Any seed delivered prior to use shall be stored in such a manner that it will be protected from damage by heat, moisture, rodents, or other causes. Any previously tested and accepted seed that has become damaged shall be discarded and replaced at no cost to the Owner.

1.7. SUBMITTALS

- A. Submit information on seed type, fertilizer, and methods of planting to CQA Engineer at least 30 days prior to planting.
- B. Provide written documentation of seed type and application rate used to CQA Engineer.
- C. Provide written documentation of fertilizer analysis and application rate used to CQA Engineer.
- D. If lime is applied, provide written documentation of limestone index zone or grade and application rate used to CQA Engineer.

PART 2 - PRODUCTS

2.1. SEED

- A. Seed mixture shall be:

<u>Species</u>	<u>Percentage</u>
Kentucky 31 Bluegrass	30
Perennial Rye Grass	25
Oats	25
Creeping Red Fescue	20

- B. Seed shall not be used on-site later than 1 year after the test date which appears on the label.
- C. Seed shall be tested, when required, in accordance with the methods and procedures used for sampling and analyzing seed for purity, germination, and noxious weed seed content as prescribed by the current edition of Rules for Testing Seed, published by the Association of Official Seed Analysts.
- D. Avoid exposure of the culture or inoculated seed to sunlight, and in no case shall such exposure exceed ½ hour.
- E. Seeding of grass, when not protected with a mulch cover, shall be done at such time of the year, except during midsummer, when temperature and moisture conditions are suitable for work of this nature. Grass mixtures may be modified by the CQA Engineer based on time of sowing.

2.2. MULCH

- A. Mulching material: Straw or hay in an air-dry condition, wood excelsior fiber, wood chips, or other suitable material of a similar nature which is substantially free of noxious weed seeds and objectionable foreign matter.

2.3. FERTILIZER AND LIME

- A. Fertilizers shall be standard, commercial, packaged, or bulk products in granular or liquid form.
- B. Fertilizer containers shall be marked with the percentages of total nitrogen available, phosphoric acid, and soluble potash.
- C. Limestone shall have a neutralizing index of not less than 40 or more than 109. A statement indicating the index zone or grade of the limestone shall be furnished for each deposit prior to use.
- D. Fertilizer, and lime if required, shall be applied in accordance with the recommendations of the topsoil test report.

2.4. WATER

- A. Water shall be clean, fresh, and free of substances or matter which could inhibit vigorous growth of grass.

PART 3 - EXECUTION

3.1. EXAMINATION

- A. CQA Engineer shall confirm that topsoil is prepared for seed, fertilizer and mulch.

3.2. PREPARATION OF TOPSOIL

- A. Prepare area with discs, harrow, or other appropriate equipment until a reasonably even and loose seedbed is obtained immediately in advance of the seeding.
- B. Loosen topsoil to a minimum depth of 2 in.
- C. Remove foreign materials, debris, stones larger than 2 in. diameter, and weeds and undesirable plants and their roots.
- D. Use a rock picker to remove stones larger than 2 in. diameter.

3.3. FERTILIZER AND LIME APPLICATION

- A. Apply fertilizer uniformly in accordance with Manufacturer's instructions at the rate specified in Part 2.03.
- B. Granular fertilizer shall be well pulverized, free of lumps when applied, and incorporated into topsoil by light disking or harrowing.
- C. Fertilizer may be applied just prior to and in conjunction with the final disking or harrowing operations of the topsoil or just prior to the final raking and leveling.
- D. In the event fertilizer is to be placed on seeding areas where the seed is to be sown by means of a spray or stream of water under pressure, the required amount of fertilizer may be placed in the tank, mixed together with the water and the seed, and constantly agitated and applied in the seeding operation. Fertilizer applied by this method will not require disking and harrowing after being placed.
- E. Lime, if required, shall be uniformly spread over the designated areas of the landfill site at the rate specified in Part 2.03.
- F. Lime, if required, shall be incorporated in the topsoil in the designated areas in conjunction with the required fertilizers, and the pertinent construction requirements applicable to fertilizers shall also apply to those materials.
- G. Lightly water to aid in the dissipation of granular fertilizer and lime at landfill site.

3.4. SEED APPLICATION

- A. Apply seed mixture at a minimum rate of 4 lb per 1,000 sf evenly in two intersecting directions (Method A), for a total application rate of 8 lb per 1,000 sf (Method A or B) over the designated areas.
- B. Seed may be sown by either Method A or Method B as approved by CQA Engineer.
 - 1. Method A:
 - a. Sow seed mixture by means of equipment adapted to the purpose, or it may be scattered uniformly over the areas to be seeded.
 - b. Lightly rake or drag to cover the seed with 1/4 in. of topsoil.
 - c. After seeding lightly roll or compact loose seedbed or seedbeds that contain clods with a cultipacker type roller or other suitable equipment.
 - d. CQA Engineer shall decide if seeded areas need to be rolled.

- e. Slopes steeper than 3H: IV need not be rolled.
- f. Scattering seed by hand shall be done only with satisfactory hand seeders and only at such times when the air is, sufficiently quiet to prevent seeds from blowing away.

2. Method B:

- a. Sow or spread seed mixture by means of a stream or spray of water under pressure operated from an approved type of machine designed for that purpose.
- b. Place seed mixture and water into tank on machine so that application is uniform and at the rate specified in Part 3.04 A.
- c. Keep seed and water in tank agitated or stirred in order to provide uniform seed distribution.
- d. Empty contents of the tank within 2 hours after seed is added.
- e. Contents left in tank longer than 2 hours will be rejected at no cost to the Owner.
- f. Dragging or rolling is not required.

3.5. MULCH APPLICATION

- A. Place mulch on seeded areas within 24 hours after the seeding has been completed.
- B. Do not perform mulching operations during periods of excessively high winds which would preclude the proper placing of the mulch.
- C. Place mulch loose or open enough to allow some sunlight to penetrate and air to slowly circulate, but thick enough to shade the ground, conserve soil moisture, and prevent or reduce erosion.
- D. Maintain the mulched areas and repair any areas damaged by wind, erosion, traffic, fire, or other causes prior to final acceptance of work under the contract.
- E. Perform work in accordance with either Method A, Method B, Method C, or a combination thereof

1. Method A:

- a. Begin mulching at top of slope proceeding downward, unless otherwise directed.

- b. Use an application rate of 1 ½ to 3 tons per acre of mulch.
 - c. Uniformly spread straw or hay mulch to a loose depth of ½ to 1 ½ in. by blowing from a machine or other approved method.
 - d. Loosen compacted mulch bales before spreading in place.
 - e. Anchor mulch into the soils immediately after spreading by making one pass longitudinally with mulch tiller. More than one pass may be necessary to provide adequate anchoring.
 - f. Mulch tiller shall consist of a series of dull, flat discs with notched edges. Discs shall be approximately 20 in. diameter, space approximately 8 in. on center.
 - g. Mulch tiller shall be equipped with a ballast compartment to permit adjustment of the weight for depth control.
2. Method B:
- a. Approved erosion control blankets or mats may be used in lieu of separate applications of mulch if approved by CQA Engineer.
3. Method C:
- a. Other methods if approved by CQA Engineer. Use of asphaltic mulching material and nonbiodegradable netting or twine shall not be permitted.

3.6. FIELD QUALITY CONTROL

- A. CQA Engineer shall document that all required areas are properly seeded.
- B. See Construction Quality Assurance Plan (CQAP) for more information.

END OF SECTION

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INSPECTION CHECKLIST

SEDIMENT, EROSION CONTROL AND STORMWATER MANAGEMENT PLAN INSPECTION CHECKLIST

This form is for your own use and completed copies should be kept in Attachment 4 as part of the Erosion Control and Stormwater Management Plan.

Inspections of each item will be performed weekly and within 24 hours after a precipitation event of 0.5 inches or greater which results in runoff during construction periods.

Inspection Item	Person Conducting Inspection	Date of Inspection	Time of Inspection	Inspection Location	Observations of Erosion and Sediment Controls	Corrective Action and/or Maintenance Performed
Silt Fence						
Berms						
Infiltration Basins						
Process Piping						
Container Storage						
Chemical Addition Areas						
Loading Decontamination						
Other						

Signature: _____

Date: _____

Company: _____

Construction Phase: Circle as Appropriate

Clear and Grub Dredging, Dewatering and Storage Earthwork
Infiltration Basins Perimeter and Interior Berms Silt Fence Restoration
Vertical Barrier Wall Site Dewatering



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DRAFT TRAFFIC MANAGEMENT PLAN



**Draft
Traffic Management Plan**

**Construction/Operation Level
Design Report
Corrective Action Management Unit
Grand Calumet River
Sediment Remediation Project**

**U.S. Steel - Gary Works
Gary, Indiana**

*Prepared for
U.S. Steel Group
Pittsburgh, Pennsylvania*

October 2000

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1.0 INTRODUCTION

This Traffic Management Plan has been prepared in conjunction with the Construction/Operation Level Design Report (COLDR) for the Corrective Action Management Unit (CAMU) for the Grand Calumet River (GCR) Sediment Remediation Project at the US Steel Gary Works Facility in Gary, Indiana. This Traffic Management Plan addresses traffic transportation issues during construction and operational activities at the CAMU. Protective measures will be taken to minimize exposure to contaminated sediments and to keep clean areas free of contamination. In addition, the integrity and cleanliness of all roads will be maintained.

This Traffic Management Plan addresses safe vehicle movement during operation of the CAMU. In addition, this Traffic Management Plan specifies the requirements for transporting the following materials:

- Equipment (barge, crane, etc) for operation of the CAMU.
- Construction and maintenance vehicles.
- General fill, soil, topsoil for revegetation and final cover.

Sediments in the GCR are contaminated with PCB and PAHs. These sediments will be dredged from the GCR via piping and discharged to the CAMU which will passively dewater the sediment and be used as a storage facility for the dewatered sediment. In addition, the CAMU may be used for other remedial corrective action waste from US Steel Gary Works Facility.

During transportation activities, operating personnel will comply with Occupational Safety and Health Administration (OSHA) requirements regarding the training and safety of workers including 29 CFR 1910.120 and 29 CFR 1926 Subparts C, D, E, and P.

The following are major requirements for the transportation activities. Trucks transporting equipment will be inspected to determine the equipment was properly decontaminated prior to transportation. If a truck, upon inspection, is not satisfactory that truck will be decontaminated prior to transportation.

Trucks used for construction or maintenance will be decontaminated after entering an area of contamination. If trucks need to transport contaminated equipment, the equipment will be decontaminated prior to transport. All construction and maintenance trucks will be inspected prior to off-site transportation.

In addition, the transportation activities will comply with Clean Water Act (CWA) regulations, Clean Air Act (CAA) regulations, and Department of Transportation (DOT) Specifications for Roads.

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2.0 EXECUTION

2.1 MAINTAINING EXISTING ROADWAYS

The existing roads located on the south and north side of the CAMU site will be used for access. These roads will be maintained as necessary including pothole repair, and general housekeeping. The CAMU operating contractor will perform a video survey of existing transportation roadways to document conditions of both permanent and temporary roads. Soil contamination will be removed from transportation vehicles tires prior to using haul roads, and dust will be controlled by progressive measures during excavation and transportation activities to prevent possible spread of contamination.

Tire washes will be used on all equipment traveling on the existing roadways, to prevent tracking of the roads. In addition, a water truck equipped with spray bars to distribute a controlled water stream on paved and unpaved on-site access roads, haul routes and ground surfaces, will be utilized for dust control.

2.2 TEMPORARY EXCAVATION ROADS

2.2.1 Construction of Temporary Roadways

The CAMU operating contractor may construct temporary roadways over the existing ground in the CAMU area, if necessary. The temporary roadways will be constructed to allow construction and maintenance of the CAMU site and ancillary facilities. The CAMU operating contractor will maintain the proper slope on all temporary roads. During construction, the lines and grades including crown and cross slope will be maintained. Stabilization geotextile fabric may be placed below the aggregate where the structural integrity of the existing ground cannot sustain compaction (90%) of modified Proctor maximum dry density.

2.2.2 Widths of Temporary Roadways

The temporary roadways will be a minimum of 20 feet wide. This width will allow enough space for two trucks to pass, while causing a minimal amount of disturbance to the existing ground.

2.2.3 Aggregate Thickness of Temporary Roadways

The temporary roadways will be constructed of a 6 in.-thickness of 3 in. diameter gravel with native material backing on the side slopes to prevent failure on the sides of the roadways.

2.3 METHOD OF TRANSPORTATION

Construction and maintenance heavy equipment will be transported to the CAMU site on flat beds, or low-boys. The construction and maintenance heavy equipment will not drive on public roads other than the north and south access roads. Materials will be brought to the CAMU site on commercial vehicles licensed for travel on public roads.

2.4 CONTAMINANT CONTROL

Trucks will not be transporting contaminated equipment, material, or debris. All equipment will be decontaminated prior to loading of the truck. In addition, all trucks and equipment will be inspected for contamination prior to transportation activities. In the event a truck needs to transport contaminated sediment or debris, trucks will be required to use truck canopies or other approved methods. In addition, trucks will be required to use truck canopies or other approved methods while hauling general fill soils, topsoil, and seed to aid in reducing wind blown dust and loss of materials. The covers shall completely enclose the top of the truck bed and prevent dusting or blowing of hauled material during transportation. If very dry materials are being transported or loaded, these materials may be controlled by spraying water on the materials during loading to prevent non-contaminated loading areas from becoming contaminated as a result of loading activities and for dust control during material transportation. However, water will be applied so that all water will be absorbed by the materials to be loaded and/or hauled.

2.5 TRANSPORTATION PLAN FOR CAMU

Access around the CAMU will be provided by four roadways, one on each side of the CAMU, as shown on Drawing D7 of the COLDR. The existing public roadway to the south of the site will provide access to the south side of the site. Along both the east and west sides of the CAMU, a 22-ft wide access road will be constructed to provide for two-way traffic. The existing roadway north of the CAMU area on U.S. Steel property will provide access to the north of the site.

A road will be constructed on the top of the perimeter and interior berms to provide access to the operating CAMU. This roadway will be 20 ft wide. The top of the berm roadway will be accessed by the four ramps, located on each side of the CAMU. These ramps will be constructed at a maximum 10% slope to allow for truck access. The base of Unit 1 and Unit 2 during construction will be accessed by roads sloping down at a 10% grade on either side of the interior berm as shown on Drawing D7 and detailed on Drawing D21 of the COLDR. All perimeter roadways, top of berm roadway ramps will be unpaved and proper dust control measures will be taken during construction and operation of the CAMU.

At several locations on the east and west perimeter berm there are manholes, cleanout risers, or dewatering wells that encroach on the top of berm roadway. At these locations

of berm roadway narrows to approximately 12 to 15 ft in width. These structures will be protected by concrete road barriers placed in the direction of traffic to direct vehicles away from these structures. At these locations traffic will be one-lane traffic. Coordination amongst equipment drivers must occur at these locations for proper passage of vehicles and equipment.

At the intersection of the interior berm, with the north and south perimeter berm a layer roadway area is included in the design. This area will allow for turning around vehicles and a location for equipment to operate from, with out blocking traffic.

2.6 TRANSPORTATION HOURS

Transportation hours for hauling materials will be during normal daily working hours. Actual transportation will be dependent on the construction schedule.

Hours of operation of the CAMU are 24 hours a day, seven days a week. Equipment that will be working on the sites after dusk or before dawn, must be equipped with proper lights.

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3.0 POLLUTION CONTAINMENT

3.1 TIRE WASH

Tire washes will be used to remove soil from vehicles and equipment leaving the CAMU site to prevent the tracking of soil on the roads during hauling activities. The tire wash will occur on a decontamination pad. The decontamination water will be collected in the sump; drummed; sampled; analyzed and properly disposed of.

3.2 TRUCK COVERS

Trucks will be equipped with standard truck covers so that the bed of the truck is enclosed during transportation of materials. These covers should control dust and odor during the transport of materials.

3.3 DUST CONTROL

Dust control on haul roads will be provided by a water truck with spray bars spraying clean water on the roads.

3.4 PARKING FOR VEHICLES

Equipment will be parked adjacent to work areas. This will prevent the possible tracking of soil, and minimize exposure. Trucks will be decontaminated, prior to exiting the site.

Workers parking will occur near to the CAMU area without interfering in with construction and operation of the CAMU.

3.5 PREVENTION OF LIQUID SPILLS

Chemicals may be used as part of the defloculation of the dredge spoils. Trucks transporting and unloading these chemicals will follow all loading and transportation procedures.

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4.0 SAFETY PRECAUTIONS

4.1 SPEED RESTRICTIONS

Trucks and/or heavy equipment will be required to travel at speeds 5 mph below the posted speed limit on all public roadways. Speed limit signs will be posted on perimeter site access roadways limiting the speeds to 15 mph. The speed limit on the top of berm access road will be 10 mph at all times. This lower speed limit is necessary due to the height of the berm and severity of the adjacent slopes of the berms. Speed limits may be temporarily reduced depending on weather conditions and/or construction occurring at the time. Contractors personnel, either direct hired or a subcontractor/vendor, breaking these speed limits will be subject to a permanent ban from driving on the site.

4.2 TRAFFIC CONTROL DEVICES

Traffic control will be administered by the Site Manager. Signage and traffic control devices will be implemented to ensure safe transportation and to protect personnel from injury and to prevent damage to the equipment. Locations of the traffic control devices, if any, will be determined during construction and operation of the CAMU.

Traffic flow will be in two directions around the CAMU property. A parking area will be designated to prevent accidents. Spotters will oversee vehicle movement in congested areas.

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5.0 DECONTAMINATION PROCEDURES

5.1 VEHICLE DECONTAMINATION

Tire washes will be used to remove soil from vehicles and equipment leaving the CAMU area to prevent the tracking of soil on the roads during hauling activities. The tire wash will occur on a decontamination pad. The decontamination water will be collected in the sump; drummed; sampled; analyzed and properly disposed, based on its contaminant concentration levels.

Prior to leaving the site and/or prior to maintenance work, equipment that comes in contact with possibly contaminated materials will be decontaminated. Excess dust, soils and sediments will be rinsed off with a high pressure spray. Vehicles will be washed with detergent (such as Alconox, Simple Green or equivalent) as appropriate, and high pressure rinsed. A steam-cleaning system will be used after the mud and/or dirt has been cleaned from the equipment. Additionally, materials will be removed from within and on the undercarriage; tracks and sprockets of crawler equipment; and the undercarriage, tires and axles of trucks and rubber tired mounted equipment. Tire washing will be required prior to moving to cleaner areas to prevent the spread of contamination from a contaminated area to an uncontaminated area. Vehicles that are unlikely to have come in contact with contaminated materials will at a minimum have their tires power-washed before release to public roads.

5.2 VERIFICATION SAMPLING OF VEHICLES

The CAMU operating contractor will visually inspect the tires and exteriors of all vehicles to ensure there was no release of contaminants during transportation activities.

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6.0 DEMOBILIZATION

6.1 ROADWAY REPAIRS

When the construction and operation of the CAMU is complete and transportation of materials is complete, the CAMU operating contractor will leave the existing roadways in good repair. Any areas of existing roadways damaged during the construction and operation of the CAMU, will be sawcut and repaired to match the existing construction.

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CONSTRUCTION QUALITY ASSURANCE PLAN



Construction Quality Assurance Plan

Construction/Operation Level Design Report Corrective Action Management Unit Grand Calumet River Sediment Remediation Project

**U.S. Steel - Gary Works
Gary, Indiana**

*Prepared for
U.S. Steel Group
Pittsburgh, Pennsylvania*

October 2000

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1.0 INTRODUCTION

This Construction Quality Assurance Plan (CQAP) has been prepared in conjunction with the Corrective Action Management Unit (CAMU) Design for the Grand Calumet River Sediment Remediation Project at the U.S. Steel - Gary Work Facility in Gary, Indiana. This CQAP addresses quality assurance for construction of the CAMU dewatering system (including the vertical barrier wall), site security (perimeter fence), CAMU excavation and berm construction, on-site road construction, installation of the CAMU liner (and associated protection), installation of the leak detection/leachate collection systems, and installation of the storm water management system.

In the context of this CQAP, quality assurance refers to the means and actions employed to provide conformity of the CAMU dewatering system, liner system, leak detection/leachate collection systems, and the storm water management system production and installation with contractual and regulatory requirements. Quality assurance will be provided by a party independent of production and installation. Quality control refers to those actions taken to provide for materials and workmanship that meet the requirements of the design plans and specifications. Quality control is provided by the manufacturers and installers of the various components of the CAMU dewatering system, liner system, leak detection/leachate collection systems, and the storm water management system.

The main emphasis of this CQAP is careful documentation of the construction quality control process, from the selection of materials through installation of the dewatering system (including the vertical barrier wall), site security (perimeter fence), CAMU excavation and berm construction, on-site road construction, installation of the CAMU liner (and associated protection), installation of the leak detection/leachate collection systems, and installation of the storm water management system. The scope of this CQAP applies to manufacturing, shipping, handling, installing, and design guidelines. Detailed specifications for construction of the aforementioned components of the CAMU are contained in Appendix M of the Construction/Operation Level Design Report (COLDR).

The CQAP consists of a project description, a discussion of the project organization and responsibility, construction quality assurance activities including sample testing procedures, construction inspection, and documentation.

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2.0 PROJECT DESCRIPTION

2.1 SITE DESCRIPTION

The U.S. Steel - Gary Works facility is located in Lake County, Indiana. The Gary Works facility covers almost 4,000 acres and is located at the northern end of the City of Gary, Indiana and is approximately 25 miles southeast of downtown Chicago, Illinois. The Gary Works facility extends approximately 7 miles along the southern shore of Lake Michigan and is roughly 1 mile wide.

The CAMU area to be used for disposal is approximately 36.2 acres and is located adjacent to the U.S. Steel – Gary Works Facility. The CAMU consists of two Units: Unit 1 is for the TSCA and RCRA regulated non-native dredge spoils and Unit 2 will hold the remaining non-TSCA and RCRA dredge spoils. Unit 1 is approximately 7.0 acres and Unit 2 is approximately 29.2 acres.

2.2 PROJECT OBJECTIVES AND SCOPE

The objectives of the CAMU design and construction, as stated in the Statement of Work, is to provide containment and passive dewatering of dredged sediments as part of the Grand Calumet River Sediment Remediation Project. Proper containment requires installation of the dewatering system (including the vertical barrier wall), site fence, CAMU excavation and berm construction, on-site road construction, installation of the CAMU liner (and associated protection), installation of the leak detection/leachate collection systems, and installation of the storm water management system. The proposed CAMU liner system is a completely synthetic liner system consisting of a: geosynthetic clay liner (GCL), secondary 60-mil high density polyethylene (HDPE) geomembrane, leak detection system (geonet composite and collection pipe), primary 60-mil HDPE geomembrane, and leachate collection system (geotextile cushion, sidewall geonet composite, and collection pipe). Protection for the geosynthetic liner system consists of a combination of geosynthetics and native granular material over the entire CAMU site.

Construction sequencing is addressed in Section 4.0 of the COLDR. The CAMU construction activities associated with the Grand Calumet River Sediment Remediation Project are briefly summarized as follows:

2.2.1 Vertical Barrier Wall

- Initial clearing and grubbing along barrier wall alignment.
- Remove existing dredge spoils in the area of the working bench.
- Construct barrier wall working bench.

- Excavate existing dredge spoils from outside the barrier wall alignment and place them inside the barrier wall alignment.
- Construct vertical barrier wall.

2.2.2 Dewatering System

- Install perimeter and interior extraction wells (EW02 through EW09).
- Install temporary stand pipes (SP01 through SP03).
- Abandon groundwater monitoring wells MW01, PO1, MW02, and MW03.
- Install replacement monitoring wells MW01R, PO1R, and MW02R and new wells MW09 and P09.
- Install dewatering system forcemain laterals and header.
- Install electrical and control wires in forcemain trenches.
- Install pipe connection manholes DMH01 through DMH10 and MH03).
- Install groundwater collection manhole (MHGW).
- Install control panels at each well and the main control panel at MHGW.
- Install groundwater discharge pipe to Outfall 032 and pipe connection manhole (MH03).

2.2.3 Site Security

- Install permanent security fencing, gates, and warning signs around the entire site.

2.2.4 CAMU Excavation

- Final clearing and grubbing of site.
- Remove existing dredge spoils at berm locations and temporarily stockpile away from berms. Grade berm subbase for drainage.
- Install GCL under perimeter and interior berms.
- Install geonet composite over GCL under perimeter berms.
- Simultaneously excavate CAMU base grades and construct berms.

- Prepare base grade surface for GCL installation.

2.2.5 Berm Construction

- Begin construction of berms using temporarily stockpiled existing dredge spoils. Use existing dredge spoils to construct entire interior berm and the inside portion of the perimeter berms.
- Complete perimeter berm construction with existing dredge spoils and native sand material.
- Extend dewatering wells during berm construction and continue well operation.
- Install storm water drainage pipes and manholes in perimeter berms as berms are being constructed.
- Reinforce inboard and outboard slopes of perimeter berms where necessary.
- Construct access roads into excavation as berms are being constructed.

2.2.6 Road Construction

- Construct perimeter access roads.
- Following liner installation, construct top of berm roads and finish off access roads into the excavation.

2.2.7 Liner System

- Excavate leak detection trenches and sumps.
- Install GCL over prepared base grades and extend up sideslopes.
- Install secondary geomembrane over GCL.
- Install geonet composite over secondary geomembrane.
- Install primary geomembrane over geonet composite.
- Install geotextile cushion on base and sidewall geonet composite on sideslopes over the primary geomembrane.

2.2.8 Leak Detection/Leachate Collection System

- Install leak detection collection pipes in trenches between the primary and secondary geomembrane.
- Construct leak detection system sumps (DS1-1, DS1-2, DS2-1, and DS2-2).
- Install leak detection system cleanouts (DC01-1 through DC01-4 and DCO2-1 through DCO2-11) and sump risers.
- Install pipe connection manholes (CM1-1, CM1-2, CM2-1, and CM2-2).
- Install leachate collection pipes in trenches above the primary geomembrane.
- Construct leachate collection system sumps (LS1-1, LS1-2, LS2-1, and LS2-2).
- Install leachate collection system cleanouts (LC01-1 through LC01-4 and LC02-1 through LC02-11) and sump risers.
- Install granular drainage blanket layer over base of CAMU.
- Install leak detection and leachate collection system forcemain.
- Install electrical and control wires in forcemain trenches.
- Install leachate collection manholes (MH01 and MH02).
- Install control panel at each pipe connection manhole and the main control panel located near MH01 and MH02.
- Install leachate discharge line to PSWTP.

2.2.9 Liner Protection

- Install geotextile cushion and the granular drainage blanket on the base of Units 1 and 2.
- Sidewall geosynthetic protection will be designed by the CAMU operating contractor.

2.2.10 Storm Water Management System

- Install storm water drainage pipes and manholes during berm construction.
- Construct infiltration basins and emergency overflow structures and discharge piping during berm construction.

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3.0 RESPONSIBILITY, AUTHORITY, AND QUALIFICATIONS

The responsibilities, authority, and qualifications identified in this CQAP are necessary to perform the CAMU construction activities.

3.1 CAMU OWNERS

3.1.1 Definition

The CAMU Owner is responsible for CAMU activities. For this project, U.S. Steel is the CAMU Owner.

3.1.2 Responsibility and Authority

The CAMU Owner is responsible for all the construction contracts. The CAMU Owner is responsible for coordinating communications with the regulatory agencies, Engineer, Earthwork Contractor, and Geosynthetic Contractor for the project. The CAMU Owner is also responsible for initiating the preconstruction, prefinal, and final inspections as presented in Section 13 - Inspection Activities of this CQAP. The CAMU Owner will serve as a liaison between all parties involved in construction to maintain communications.

The CAMU Owner has the ultimate responsibility for installation of the dewatering system (including the vertical barrier wall), site fence, CAMU excavation and berm construction, on-site road construction, installation of the CAMU liner (and associated protection), installation of the leak detection/leachate collection systems, and installation of the storm water management system, in accordance with the design plans and specifications.

3.1.3 Qualifications

The selection of the CAMU Owner's representative is the responsibility of the CAMU Owner. The CAMU Owner's representative should be familiar with the construction of dewatering systems (including the vertical barrier wall), excavation and berm construction, road construction, liner installation, leak detection/leachate collection systems, storm water management systems, and regulatory requirements of the U.S. Environmental Protection Agency (USEPA) and the Indiana Department of Environmental Management (IDEM).

3.1.4 Submittals

The CAMU Owner is responsible for submitting required information to USEPA. Submittals include:

- Design drawings and specifications

- Progress reports
- Record Drawings
- Construction Completion Report

3.2 ENGINEER

3.2.1 Definition

The Engineer is the individual/firm responsible for design of the dewatering system (including the vertical barrier wall), site fence, CAMU excavation and berm, on-site roads, CAMU liner, leak detection/leachate collection systems, storm water management system, including reports, drawings, plans, and specifications. The Engineer is also the individual/firm responsible for interpretation of the design plans and specifications during construction.

3.2.2 Responsibility and Authority

The Engineer is responsible for performing the engineering design and preparing the associated drawings and specifications for the CAMU construction activities. The Engineer is responsible for interpretation of the design, drawings, and specifications during construction. The Engineer is responsible for approving all design and specification changes and making design clarifications necessary during CAMU construction activities.

The Engineer must attend the preconstruction meeting, prefinal inspection, and final inspection as discussed in Section 13 - Inspection Activities, of this CQAP. The Engineer reports directly to the CAMU Owner.

3.2.3 Qualifications

The Engineer must be a qualified professional engineer, licensed in the State of Indiana. The Engineer must be familiar with the following:

- Geotechnical design methods and procedures
- Geosynthetic design methods and procedures
- Installation of dewatering systems
- Installation of liners systems
- Installation of leak detection/leachate collection systems

- Applicable regulatory requirements

3.2.4 Submittals

The Engineer is responsible for submittal of the following documentation to the CAMU Owner:

- Design drawings and specifications
- Documentation of approved design changes
- Progress reports

3.3 CONSTRUCTION QUALITY ASSURANCE ENGINEER

3.3.1 Definition

The Construction Quality Assurance (CQA) Engineer is the engineer personally in charge of the construction quality assurance work. The CQA Engineer may be an employee of the CAMU Owner or the Engineer. In some cases, the duties of the CQA Engineer may be shared by two individuals; a CQA Engineer located in the office, and a Site Technician located at the site. The Site Technician reports directly to the CQA Engineer.

3.3.2 Responsibility and Authority

The Site Technician is responsible for observing and documenting activities related to the installation of the dewatering system (including the vertical barrier wall), site fence, CAMU excavation and berm, on-site roads, CAMU liner (and associated protection), leak detection/leachate collection systems, and storm water management system. The CQA Engineer is ultimately responsible for seeing that the field observation and documentation is complete and for preparing a Construction Completion Report as outlined in Section 14 - Documentation, of this CQAP.

The Site Technician will observe and document the activities of the Contractors in sufficient detail and with sufficient continuity to provide a high level of confidence that the work product complies with the design plans and specifications. The CQA Engineer and/or the Site Technician will also verify that installation requirements are met and that all submittals from the Contractors are provided. In addition, the CQA Engineer and/or the Site Technician will perform and repeat tests, as necessary, to provide a high degree of certainty that the physical/mechanical characteristics of the dewatering system (including the vertical barrier wall), site fence, CAMU excavation and berms, on-site roads, CAMU liner, leak detection/leachate collection systems, and storm water management system meet or exceed specifications.

The Site Technician must maintain daily reports of earthwork and geosynthetic quality control activities. These reports will include, at a minimum, visual observations and test results. In addition, these reports will summarize significant events and problems encountered and resolved. These daily reports will be submitted to the CQA Engineer.

Any differences between the CQA Engineer's interpretation of the design plans and specifications from the Contractors' interpretation must be resolved by the Engineer. If such assessment indicates any actual or suspected work deficiencies, the CQA Engineer must inform the Contractors' of these deficiencies.

3.3.3 Qualifications

The CQA Engineer and the Site Technician must be experienced in the preparation of quality assurance documentation, including quality assurance forms, reports, and as-built drawings. The CQA Engineer and Site Technician must be experienced in the installation of dewatering systems (including the vertical barrier wall), excavation and berm construction, road construction, liner installation, leak detection/leachate collection systems, storm water management systems. The Site Technician must be NICET approved for installing high density polyethylene (HDPE) geomembrane, geonet, and geotextile.

3.3.4 Submittals

The Site Technician will be responsible for submitting daily field reports to the CQA Engineer throughout the construction period. The CQA Engineer will be responsible for submitting the Construction Completion Report and record drawings to the CAMU Owner.

3.4 BARRIER WALL CONTRACTOR

3.4.1 Definition

The Barrier Wall Contractor is the individual/firm responsible for construction components of the vertical barrier wall.

3.4.2 Responsibility and Authority

The Barrier Wall Contractor is responsible for installing the vertical barrier wall system in conformance with the design plans and specifications. The Barrier Wall Contractor may also be responsible for locating and transporting the required materials, and other work, as outlined in the specifications.

The Barrier Wall Contractor will be under contract with the CAMU Owner. The Barrier Wall Contractor may be a subcontractor of the Earthwork Contractor, or may be the same company as the Earthwork Contractor.

3.4.3 Qualifications

The Barrier Wall Contractor must be approved by the CAMU Owner. The Barrier Wall Contractor must be able to provide qualified personnel to meet the demands of the project. The Barrier Wall Contractor, unless otherwise approved by the CAMU Owner, must be qualified based on previously demonstrated experience and management ability. The Barrier Wall Contractor must have experience with installation of vertical barrier wall systems.

3.4.4 Submittals

Well in advance of beginning barrier wall construction activities, the Barrier Wall Contractor must submit to the CAMU Owner and CQA Engineer, the following:

- A list of specific equipment to be used on the project
- Company background and information
- A demonstration of bonding capabilities
- A list of at least three comparable projects

3.5 WELL DRILLING CONTRACTOR

3.5.1 Definition

The Well Drilling Contractor is the individual/firm responsible for drilling and installation of dewatering system wells, monitoring wells, and temporary stand pipes. The Well Drilling Contractor is also responsible for monitoring well abandonment.

3.5.2 Responsibility and Authority

The Well Drilling Contractor is responsible for drilling and installing the dewatering system wells, monitoring wells, and temporary stand pipes, and abandoning monitoring wells, in conformance with the design plans and specifications. The Well Drilling Contractor may also be responsible for locating and transporting the required materials, and other work, as outlined in the specifications.

The Well Drilling Contractor will be under contract with the CAMU Owner. Well Drilling Contractor may be a subcontractor of the Earthwork Contractor.

3.5.3 Qualifications

The Well Drilling Contractor must be approved by the CAMU Owner. The Well Drilling Contractor must be able to provide qualified personnel to meet the demands of the project. The Well Drilling Contractor, unless otherwise approved by the CAMU Owner, must be qualified based on previously demonstrated experience and management ability. The Well Drilling Contractor must have experience with installation of dewatering wells and monitoring wells.

3.5.4 Submittals

Well in advance of beginning well installation activities, the Well Drilling Contractor must submit to the CAMU Owner and CQA Engineer, the following:

- A list of specific equipment to be used on the project
- Company background and information
- A demonstration of bonding capabilities
- A list of at least three comparable projects

3.6 EARTHWORK CONTRACTOR

3.6.1 Definition

The Earthwork Contractor is the individual/firm responsible for earthwork, including site preparation and grading and construction components of the CAMU excavation and berm construction, and for the leak detection, leachate collection (including granular drainage, blanket) and storm water management systems, including installation of the horizontal piping systems, sumps, manholes, side slope risers, and infiltration basins.

3.6.2 Responsibility and Authority

The Earthwork Contractor is responsible for the CAMU excavation and berm construction (including geosynthetic reinforcement), and installation of the CAMU, leak detection/leachate collection systems (including granular drainage blanket), and storm water management systems in conformance with the design plans and specifications. The Earthwork Contractor may also be responsible for locating and transporting the required materials, and other work, as outlined in the specifications.

The Earthwork Contractor will be under contract with the CAMU Owner.

3.6.3 Qualifications

The Earthwork Contractor must be approved by the CAMU Owner. The Earthwork Contractor must be able to provide qualified personnel to meet the demands of the project. The Earthwork Contractor, unless otherwise approved by the CAMU Owner, must be qualified based on previously demonstrated experience and management ability. The Earthwork Contractor must have experience with excavation and berm construction (including geogrid reinforcement), road construction, leak detection/leachate collection systems, and storm water management systems.

3.6.4 Submittals

Well in advance of beginning earthwork activities, the Earthwork Contractor must submit to the CAMU Owner and CQA Engineer, the following:

- A list of specific equipment to be used on the project
- Company background and information
- A demonstration of bonding capabilities
- A list of at least three comparable projects

3.7 GEOSYNTHETIC CONTRACTOR

3.7.1 Definition

The Geosynthetic Contractor is the individual/firm responsible for supplying and installing the geosynthetic clay liner (GCL), geomembrane, geonet composite, and geotextile components of the CAMU liner.

3.7.2 Responsibility and Authority

The Geosynthetic Contractor is responsible for installing the GCL, geomembrane, geonet composite, and geotextile in conformance with the design plans and specifications. The Geosynthetic Contractor is also responsible for supplying and transporting the required materials as outlined in the specifications.

The Geosynthetic Contractor will be under contract with the CAMU Owner or may be a subcontractor of the Earthwork Contractor.

3.7.3 Qualifications

The Geosynthetic Contractor must be approved by the CAMU Owner. The Geosynthetic Contractor must be able to provide qualified personnel to meet the demands of the project. The Geosynthetic Contractor, unless otherwise approved by the CAMU Owner, must be qualified based on previously demonstrated experience and management ability. The Geosynthetic Contractor must have experience with installation of GCL, HDPE geomembrane, geonet composite, and other geotextile components of the liner system.

3.7.4 Submittals

Well in advance of beginning geosynthetic installation activities, the Geosynthetic Contractor must submit to the CAMU Owner and CQA Engineer, the following:

- A list of specific equipment to be used on the project
- Company background and information
- A demonstration of bonding capabilities
- A list of at least three comparable projects
- A detailed panel layout for the geomembrane

3.8 GEOTECHNICAL LABORATORY

3.8.1 Definition

The Geotechnical Laboratory is a firm, independent of the CAMU Owner and the Contractors, responsible for conducting tests on soil samples submitted by the CQA Engineer.

3.8.2 Responsibility and Authority

The Geotechnical Laboratory is responsible for conducting appropriate laboratory tests as directed by the CQA Engineer. The test procedures must be done in accordance with the test methods outlined in the specifications and this CQAP. The Geotechnical Laboratory is responsible for providing report ready test results.

3.8.3 Qualifications

The Geotechnical Laboratory must have an acceptable program for maintaining and calibrating testing equipment. The Geotechnical Laboratory must demonstrate that laboratory testing is performed by personnel with experience and/or training in soil testing

fundamentals. The laboratory personnel must be familiar with ASTM and AASHTO test standards. The Geotechnical Laboratory must be capable of providing test results in a timely manner to meet project needs.

3.8.4 Submittals

The Geotechnical Laboratory will submit test results to the CQA Engineer within the agreed time frames. Written test results will be in an easily readable format and include references to the standard test method used.

3.9 GEOSYNTHETIC LABORATORY

3.9.1 Definition

The Geosynthetic Laboratory is a firm, independent of the CAMU Owner and the Contractors, responsible for conducting tests on geosynthetic samples submitted by the CQA Engineer.

3.9.2 Responsibility and Authority

The Geosynthetic Laboratory is responsible for conducting appropriate laboratory tests as directed by the CQA Engineer. The test procedures must be done in accordance with the test methods outlined in the specifications and this CQAP. The Geosynthetic Laboratory is responsible for providing report ready test results.

3.9.3 Qualifications

The Geosynthetic Laboratory must have an acceptable program for maintaining and calibrating testing equipment. The Geosynthetic Laboratory must be a Geosynthetic Accreditation Institute - Laboratory Accreditation Program (GAI-LAP) accredited laboratory. The Geosynthetic Laboratory must demonstrate that laboratory testing is performed by personnel with experience and/or training in geosynthetic testing fundamentals. The laboratory personnel must be familiar with ASTM and GRI test standards. The Geosynthetic Laboratory must be capable of providing test results in a timely manner to meet project needs.

3.9.4 Submittals

The Geosynthetic Laboratory will submit test results to the CQA Engineer within the agreed time frames. Written test results will be in an easily readable format and include references to the standard test method used.

4.0 VERTICAL BARRIER WALL

4.1 OBSERVATION AND INSPECTION

Observation and inspection of vertical barrier wall construction will be performed by the CQA Engineer and will include the following:

- Visual observation and photodocumentation of initial clearing and grubbing, existing dredge spoil removal, working bench construction, and vertical barrier wall construction.
- Visual observation of the lateral and vertical limits of the vertical barrier wall construction.
- Documentation of trench grades.
- Visual classification, documentation, and sample collection for laboratory testing of the clay key-in material.
- Obtaining samples for laboratory testing from the slurry and soil-bentonite backfill material.

4.2 CONSTRUCTION TESTING

Both in-field and laboratory testing will be performed to document materials used and method of placement for the vertical barrier wall.

4.2.1 Trenching

Measurements must be collected to verify trench depth prior to backfilling with soil-bentonite backfill material. Trench length will also be confirmed by survey.

In field testing will be performed at the frequency shown in Table 1 of this CQAP. Testing will include:

- Depth measurements will be collected every 10 linear feet.
- Survey length of trench, daily.

4.2.2 Key-In Material

The native clay key-in material will be visually classified in the field and samples will be submitted for testing to the geotechnical laboratory.

In field and laboratory testing will be performed at the frequency shown in Table 1 of this CQAP. Testing will include:

- Natural Moisture (ASTM D 2216).
- Atterberg Limits (ASTM D4318).
- Grain Size Analysis – (ASTM D422; sieve and hydrometer)

4.2.3 Slurry

The slurry used in the vertical barrier wall construction must be able to form a low permeability filter cake on the wall of the trench. The density of the slurry must be great enough to provide sufficient pressure against the trench walls to keep the trench open, but not so dense that it can not be pumped from the slurry pond.

In field and laboratory testing will be performed at the frequency shown in Table 1 of this CQAP. Testing will include:

- Marsh-Funnel Test (40 Marsh seconds or greater)
- Density
- Filtrate Loss (<30 cc after 30 minutes at 100 psi)
- pH (7-10)
- Measure slurry level – (no lower than 2-ft below working bench)
- Sand content of slurry at holding pond and near bottom of trench.

4.2.4 Soil-Bentonite Backfill

The soil-bentonite backfill will consist of native sand mixed with fines to provide a low hydraulic conductivity with adequate slump and density (i.e. the backfill must be dense enough to displace the slurry).

In field and laboratory testing will be performed at the frequency shown in Table 1 of this CQAP. Testing will include:

- Slump Test (ASTM C143; 3-7 inches)
- Permeability Test (ASTM D5084; $<1 \times 10^{-7}$ cm/s)
- Density (unit weight) 15 lb/ft³ greater than slurry density near trench bottom

- Grain-Size Analysis (ASTM D422; P200 > 30%)
- Excavation Toe Location (Station) and depth.
- Trench Backfill Location (Station) and depth.

4.3 FAILING TESTS OR MATERIALS

If failing tests occur adjustments will be made to the slurry and/or soil-bentonite backfill to obtain the required properties.

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5.0 DEWATERING SYSTEM

The dewatering system consists of the following components:

- Dewatering wells, including:
 - Pumps
 - Pitless adapter
 - Pressure transducer
- Dewatering conveyance system, including:
 - Dewatering system forcemain
 - Pipe connection manholes
 - Valves and flow meters
 - Groundwater collection manhole, pumps, and discharge pipe
- Electrical and control systems at each well and at the groundwater collection manhole.

5.1 OBSERVATION AND INSPECTION

The CQA Engineer will be present on site on a full-time basis during construction to document that construction of the dewatering system is performed in accordance with the design plans and specifications. The CQA Engineer will be responsible for the following items:

- Observe installation and development of the dewatering wells.
- Observe horizontal piping installations (including valves) and obtain dewatering system forcemain pipe inverts and location information.
- Observe pressure testing of piping systems.
- Observe and document excavations, bedding, and backfill of pipe trenches and manhole excavations.
- Observe installation of the dewatering pumps.
- Observe installation of pipe connection manholes and the groundwater collection manhole.
- Observe installation of valves and flow meters.
- Observe installation of the electrical and control systems.
- Survey pertinent system inverts and elevations.

- Maintain daily field notes and testing records regarding project construction.
- Observe working condition of all dewatering system components.
- Provide photographic documentation of major construction activities.

5.2 CONSTRUCTION TESTING

In-field testing will be performed to document that installation and materials used are in conformance with the design drawings and specifications. The Earthwork Contractor is responsible for selecting materials and components that meet project requirements. The Earthwork Contractor will submit manufacturers' information regarding selected materials for approval prior to installation. Specific testing and sampling activities for the dewatering system are discussed below.

5.2.1 Groundwater Dewatering Wells

The well screen shall consist of an 8-in. diameter 0.20-in. slot, "High Q", stainless steel screen. The well materials of construction include 8 in. (stainless steel) pipe, 3-in. pitless adapter, 3-in. BCS outlet pipe, and associated fittings. The pipe assemblies will be air-pressure tested by the Earthwork Contractor after installation to document integrity of the pipe and pipe connections. Air-pressure testing will be performed in accordance with the specifications and the construction will be documented by the CQA Engineer. Refer to Drawings D5 and D19 of the COLDR for well locations and well details, respectively.

5.2.2 Pipe Bedding Material and Trench Backfill

Pipe bedding and backfill materials will conform with the specifications and placement will be documented by the CQA Engineer.

In field and laboratory testing will be performed at the frequency shown in Table 1 of this CQAP. Testing will include:

- Field Moisture (ASTM D2922)
- Field Density (ASTM D3017)
- Modified Proctor Moisture - Density Relationship (ASTM D1557)
- Grain-Size Analysis (ASTM D422; sieve and hydrometer).

5.2.3 Dewatering Piping System

The dewatering system forcemain lateral from the pump outlet pipe to the forcemain header consists of 2 in. diameter standard dimension ratio (SDR) 11 HDPE pipe and associated fittings. The dewatering forcemain header consists of 6 in. diameter SDR 11 HDPE pipe and associated fittings. The buried pipe systems will be air-pressure tested by the Earthwork Contractor after installation to document integrity of the pipe and pipe connections. Air-pressure testing will be performed in accordance with the specifications and documented by the CQA Engineer. Construction will be documented by the CQA Engineer. Refer to Drawings D5 and D19 of the COLDR for the forcemain locations and details, respectively.

5.2.4 Groundwater Collection Manhole

The groundwater collection manhole (MHGW) is constructed of pre-cast concrete. The Groundwater Collection Manhole will be installed by excavating the native material to the design elevation. The backfill around the manhole will be compacted to 90% of the modified Proctor maximum dry density and will be tested for compactive effort as the frequencies detailed on Table 1. Construction will be documented by the CQA Engineer. Refer to Drawings D5 and D20 of the COLDR for manhole location and details, respectively.

5.2.5 Pumps

The dewatering well pumps and manhole pumps will be installed based on manufacturers' and suppliers' requirements. The pumps and controls will be observed to be in working order upon completion of installation. Electrical and control system components requirements are described in the specifications.

5.2.6 Electrical and Controls

The electrical service to the CAMU dewatering system is 480-volt, 3-phase, 4-wire power and extends from the existing service near the former Select Beverage facility to the CAMU dewatering system. Electrical service includes a service entrance, utility meter, main disconnect, transformers, electrical and control panels, and related equipment. Electrical and control wires run to the groundwater collection manhole and each dewatering well. Construction will be documented by the CQA Engineer.

The dewatering system controls will be installed based on manufacturers' and suppliers' requirements. The controls will be observed to be in working order upon completion of installation. Electrical and control system components' requirements are described in the specifications.

5.3 FAILING TESTS OR MATERIALS

If failing field tests occur for any of the pressure tested components of the dewatering system, the leak will be identified, repaired/replaced, and retested to achieve passing tests. If any field density and moisture test results are outside of acceptable ranges, the areas will be reworked and retested to achieve passing tests. Unacceptable subbase material under manholes and underground piping will be removed and replaced with acceptable material. Any malfunctioning electrical or mechanical equipment will be replaced.

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6.0 SITE SECURITY

A permanent security fence will be placed around the perimeter of the CAMU site, as shown on Drawing D6 of the COLDR, prior to start of the CAMU construction activities. Details on the permanent security fence are shown on Drawing D18 of the COLDR.

This section addresses the construction quality assurance procedures for installation of the permanent security fence.

6.1 MATERIAL QUALITY CONFIRMATION

The selection of the material used for the permanent security fence must be approved by the Engineer prior to installation.

6.2 OBSERVATION AND INSPECTION

Construction observation, photodocumentation, and inspection will occur during fence installation. Defects observed in the installed fence will be replaced. Inspection will also include surveying the permanent security fence location for permanent record which will be included in the Construction Completion Report. Construction observation and inspection will be performed by the CQA Engineer.

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7.0 CAMU EXCAVATION

CAMU construction involves excavating existing dredge spoils and native soils at the site and preparing the base grade surface for liner system placement.

7.1 OBSERVATION AND INSPECTION

Observation and inspection of CAMU excavation will be performed by the CQA Engineer and will include the following:

- Observe and document monitoring well abandonments and well installation (replacement wells and new wells).
- Observe clearing and grubbing activities.
- Visual observation and photodocumentation of the CAMU excavation.
- Visual observation of the lateral and vertical limits of the CAMU excavation.
- Observe subbase soil so that unsuitable soil is not present.
- Observe smooth drum rolling of the base grade layer following excavation activities.
- Perform field density tests on base grade material.
- Obtain samples for geotechnical laboratory testing from the base and sidewalls of the excavation.

7.2 CONSTRUCTION TESTING

The base grade surface will be visually observed for adequate compaction of the material, as detailed in the specifications. Base grades will be constructed to the lines and grades shown on Drawing D7 of the COLDR. Base grades will be surveyed on a 100-ft grid. Both in-field and laboratory testing will be performed to document materials used and base grade preparation of the CAMU excavation.

In field and laboratory testing will be performed at the frequency shown in Table 1 of this CQAP. Testing will include:

- Survey base grades

7.3 FAILING TESTS OR MATERIALS

Unacceptable subbase material will be removed and replaced with acceptable material.

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8.0 BERM CONSTRUCTION

CAMU perimeter and interior berms will be constructed using existing dredge spoils and native soils at the site such that cut and fill is nearly balanced.

8.1 OBSERVATION AND INSPECTION

Observation and inspection of CAMU berm construction will be performed by the CQA Engineer and will include the following:

- Visual observation and photodocumentation of the CAMU berm construction.
- Visual observation of the lateral and vertical limits of the CAMU berms.
- Documentation of berm grades.
- Documentation of GCL installation procedures.
- Documentation of slope reinforcement installation procedures.
- Collection of samples for geotechnical laboratory analysis.

8.2 CONSTRUCTION TESTING

Both in-field and laboratory testing will be performed to document materials used and method of berm construction including stabilization methods.

In field and laboratory testing will be performed at the frequency shown in Table 1 of this CQAP. Testing will include:

- Field Moisture (ASTM D2922)
- Field Density (ASTM D3017)
- Modified Proctor Moisture - Density Relationship (ASTM D1557)
- Survey on a 100-ft grid per ft
- GCL-bentonite mass/area

8.2.1 Topsoil Layer

A topsoil layer that is capable of supporting vegetation is required as the final layer on the outboard slopes of the berms. No field testing will be required of the topsoil layer.

8.2.2 Storm Water and Erosion Control Structures

The underground portion of the storm water management system will be constructed prior to and during berm construction activities. Refer to Section 12 of this CQAP for more details on storm water management.

8.3 FAILING TESTS OR MATERIALS

If any field density and moisture test results are outside of acceptable ranges, the areas will be reworked and retested to achieve passing tests. Unacceptable subbase material will be removed and replaced with acceptable material.

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9.0 ROAD CONSTRUCTION

Operation of the CAMU requires vehicular access around the perimeter of the site as well as on top of the perimeter and interior berms. Roads will also be constructed to provide access to the bottom of Units 1 and 2.

9.1 OBSERVATION AND INSPECTION

Observation and inspection of CAMU road construction will be performed by the CQA Engineer and will include the following:

- Visual observation and photodocumentation of the CAMU road construction.
- Documentation of road grades.
- Obtaining samples for geotechnical laboratory testing of the base course and surface course materials at frequencies shown in Table 1 of this CQAP.

9.2 CONSTRUCTION TESTING

Both in-field and laboratory testing will be performed to document materials used and method of road construction.

9.2.1 Base Course

The base course used for the access roads will be tested both in the field and in the laboratory. In-field and laboratory testing will be performed at the frequency shown in Table 1 of this CQAP. Testing will include the following:

- Field Moisture (ASTM D2922)
- Field Density (ASTM D3017)
- Grain Size Distribution (ASTM D422; sieve)
- Modified Proctor Moisture-Density Relationship (ASTM D1557)
- Survey on a 100-ft grid

9.2.2 Surface Course

The surface course will be tested in the field for thickness and compaction. Infield testing will be performed at the frequency shown in Table 1 of this CQAP. Testing will include the following:

- Field Moisture (ASTM D2922)
- Field, Density (ASTM D3017)
- Modified Proctor Moisture-Density Relation (ASTM D1557)
- Grain Size Distribution (ASTM D422; sieve)
- Survey on a 100-ft grid

9.3 FAILING TESTS OR MATERIALS

If any field or laboratory tests are outside the acceptable range, the material will either be reworked until it is within acceptable range or will be removed and replaced with acceptable material.

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10.0 LINER SYSTEM

10.1 OBSERVATION AND INSPECTION

The CQA Engineer will be present on site on a full-time basis during construction to document that construction of the geosynthetic liner is performed in accordance with the design plans and specifications. The CQA Engineer will be responsible for the following items:

- Inspect base grade surface to be free from sharp objects prior to placing the GCL.
- Observe and document installation of GCL.
- Observe and document installation of secondary geomembrane.
- Observe and document installation of geonet composite.
- Observe and document installation of primary geomembrane.
- Observe and document installation of geotextile cushion on the base and geonet composite on the sidewalls.
- Collect samples of geosynthetic materials at frequencies shown in Table 1 of this CQAP.
- Observe and document installation of liner protection.
- Obtain and record survey information.
- Maintain daily field notes regarding project construction.
- Provide photographic documentation of major construction activities.

10.2 CONSTRUCTION TESTING

Both in-field and laboratory testing will be performed to document materials used and method of placement for the geosynthetic liner system.

10.2.1 Base Grade Preparation

Refer to Section 7 of this CQAP for base grade preparation.

10.2.2 Geosynthetic Clay Liner

The Geosynthetic Clay Liner (GCL) will satisfy the criteria in the specifications.

In field and laboratory testing will be performed at the frequencies shown in Table 1 of this CQAP. Testing will include:

- Bentonite Mass/Area (ASTM D5993)
- GCL Grab Tensile (ASTM D4632)
- GCL Peel Strength (ASTM D4632)
- Interface friction (ASTM D5321)

10.2.3 Secondary Geomembrane Layer

The geomembrane will consist of 60 mil HDPE satisfying the criteria in the specifications.

In field and laboratory testing will be performed at the frequencies shown in Table 1 of this CQAP. Testing will include:

- Thickness (ASTM D5199)
- Specific Gravity (ASTM D792 or D1505)
- Melt Index (ASTM D1238)
- Tensile Properties (ASTM D638)
- Environmental Stress Crack Resistance (ASTM D1693 or D5397)
- Seam Peel and Shear (ASTM D4437)
- Air Pressure Test of Seams (GRI-GM6)
- Interface Friction with material above and below (ASTM D5321)

10.2.4 Geonet Composite

The leak detection drainage layer and the primary drainage layer on the sidewall will consist of a geonet constructed of high density polyethylene satisfying the criteria in the specifications. Laboratory testing will be performed at the frequencies shown in Table 1 of this CQAP. Testing will include:

Geotextile

- Apparent Opening Size (ASTM D4751)
- Transmissivity (ASTM D4716)

Geonet

- Transmissivity (ASTM D4716)

10.2.5 Primary Geomembrane

The geomembrane will consist of 60 mil HDPE satisfying the criteria in the specifications.

In field and laboratory testing will be performed at the frequencies shown in Table 1 of this CQAP. Testing will include:

- Thickness (ASTM D5199)
- Specific Gravity (ASTM D792 or D1505)
- Melt Index (ASTM D1238)
- Tensile Properties (ASTM D638)
- Environmental Stress Crack Resistance (ASTM D1693 or D5397)
- Seam Peel and Shear (ASTM D4437)
- Air Pressure Test of Seams (GRI-GM6)
- Interface Friction with material above and below (ASTM D5321)

10.2.6 Geotextile Cushion

The geotextile layer will consist of a nonwoven needle-punched geotextile constructed of either polypropylene or polyester satisfying the criteria in the specifications. In field and laboratory testing will be performed at the frequencies shown in Table 1 of this CQAP. Testing will include:

- Mass/Unit Area (ASTM D5261)
- Grab Strength (ASTM D4632)
- Elongation (ASTM D4632)

- Trapezoidal Tear (ASTM D4533)
- Puncture Strength (ASTM D4833)
- Burst Strength (ASTM D3786)

10.3 FAILING TESTS OR MATERIALS

If failing laboratory or field tests occur for any of the geosynthetic liner components, the area will be reworked and retested to achieve passing tests. If the material is incapable of achieving passing results, the material will be removed and replaced with acceptable material (if seam test fails, replace 10 feet in either direction).

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11.0 LEAK DETECTION AND LEACHATE COLLECTION SYSTEM

The Leak Detection and Leachate Collection systems consists of the following components:

- Collection piping, including:
 - Perforated pipes (6 in. diameter, Sch. 120 PVC)
 - Sideslope non-perforated clean-out risers (6 in. diameter, Sch. 120 PVC)
- Drainage layer, including:
 - Granular drainage layer
 - Geonet composite – leak detection system and sidewall leachate collection system (discussed in Section 10 of this CQAP)
- Leachate collection sumps, including:
 - Pumps
 - Sideslope Risers (18-in. diameter HDPE SDR11)
- Leachate conveyance system, including:
 - Forcemain (3-in. diameter HDPE SDR11)
 - Pipe connection manholes
 - Leachate collection manhole (MH01 and MH02)
- Electrical and control systems

11.1 OBSERVATION AND INSPECTION

The CQA Engineer will be present on site on a full-time basis during construction to document that construction of the Leak Detection and Leachate Collection systems are performed in accordance with the design plans and specifications. The CQA Engineer will be responsible for the following items:

- Observe installation of the leak detection and leachate collection system collection pipes and drainage material.
- Observe horizontal piping installations and obtain leak detection and leachate collection pipe inverts and location information.
- Observe pressure testing of piping systems and leak detection testing of sumps.
- Observe and document excavations and backfill of pipe trenches, and sump and manhole excavations, including restoration of any CAMU surface areas disturbed during construction.
- Observe installation of the sump pumps.

- Observe installation of pipe connection and leachate collection manholes.
- Observe installation of the electrical and control systems
- Survey pertinent system inverts and elevations.
- Maintain daily field notes and testing records regarding project construction.
- Observe working condition of all leak detection and leachate collection system components.
- Provide photographic documentation of major construction activities.

11.2 CONSTRUCTION TESTING

In-field testing will be performed to document that installation and materials used are in conformance with the design drawings and specifications. The Earthwork Contractor is responsible for selecting materials and components that meet project requirements. The Earthwork Contractor will submit manufacturers' information regarding selected materials for approval prior to installation. Specific testing and sampling activities for the Leak Detection and Leachate Collection Systems are discussed below. In field and laboratory testing will be performed at the frequency shown in Table 1 of this CQAP.

11.2.1 Granular Drainage Layer

The granular drainage layer will consist of a 2-ft thick layer of graded granular material satisfying the grain size distribution in the specifications. The material, used for granular drainage blankets will be rounded, free from sharp edges, and noncalcareous.

In field and laboratory testing will be performed at the frequency shown in Table 1 of this CQAP. Testing will include:

- Grain-Size Analysis (ASTM D422; sieve)
- Survey on a 100-ft grid

11.2.2 Sidewall Geonet Composite

Refer to Section 10, Liner System of this CQAP.

11.2.3 Pipe Bedding and Trench Backfill Material

Pipe bedding and backfill materials will conform with the specifications and placement will be documented by the CQA Engineer.

In field and laboratory testing will be performed at the frequency shown in Table 1 of this CQAP. Testing will include:

- Grain Size Analyses (ASTM D422; sieve)

11.2.4 Collection and Conveyance Pipes

The leachate forcemain pipe will be air-pressure tested by the Earthwork Contractor after installation to document integrity of the pipe and pipe connections. Air-pressure testing will be performed in accordance with the specifications and documented by the CQA Engineer. Individual pipe sections will be pressure tested during construction to confirm connection methods. To allow for liquids drainage and removal of leachate formed in the pipes, the headers will be installed with a minimum slope of 0.5%. Construction will be documented by the CQA Engineer. Refer to Drawings D8 and D25 through D30 of the COLDR for the header pipe locations and details, respectively. The location and elevations of the pipe systems, including inverts, junctions, bends, etc., will be located by survey.

11.2.5 Sumps

Leak detection and leachate collection system collection sumps are constructed by excavating to the dimensions shown on Drawings D27 and D28, respectively of the COLDR. The integrity of the collection sumps will be tested using a 24-hour leak detection test. Leak detection testing will be performed in accordance with the specifications and documented by the CQA Engineer.

11.2.6 Pumps

The leak detection and leachate collection system sump pumps and manhole pumps will be installed based on manufacturers' and suppliers' requirements. The pumps and controls will be observed to be in working order upon completion of installation. Electrical and control system components requirements are described in the specifications.

11.2.7 Collection Manholes

The leak detection and leachate collection system collection manholes (MH01 and MH02) are constructed of pre-cast concrete. The manholes will be wrapped in GCL as a secondary containment system. Construction will be documented by the CQA Engineer. Refer to Drawing D31 of the COLDR for manhole details.

11.2.8 Pipe Connection Manholes

Leachate extracted from Unit 1 (leachate collection and leak detection systems) travels through, and is metered in, pipe connection manholes CM1-1 and CM1-2, which are located along the west edge of Unit 1. Leachate extracted from Unit 2 travels through, and

is metered in, pipe connection manholes CM2-1 and CM2-2, which are located along the east edge of Unit 2. The pipe connection manholes consist of a buried PE box containing pipe connections, flow meters, and sample ports. Construction will be documented by the CQA Engineer. Refer to Drawing D30 of the COLDR for manhole details.

11.2.9 Electrical and Controls

The electrical service to the CAMU leak detection and leachate collection system is 480-volt, 3-phase, 4-wire power and will extend from existing service near the former Select Beverage facility to the CAMU leak detection and leachate collection system. Electrical service includes a service entrance, utility meter, main disconnect, transformers, electrical and control panels, and related equipment. Control wires will run to each sump location and the leachate collection manholes. Construction will be documented by the CQA Engineer.

The leak detection and leachate collection system controls will be installed based on manufacturers' and suppliers' requirements. The controls will be observed to be in working order upon completion of installation. Electrical and control system components requirements are described in the specifications.

11.3 FAILING TESTS OR MATERIALS

If failing field tests occur for any of the pressure tested components of the leak detection/leachate collection systems, the leak will be identified, repaired/replaced, and retested to achieve passing tests. If any field density and moisture test results are outside of acceptable ranges, the areas will be reworked and retested to achieve passing tests. Unacceptable subbase material under manholes and underground piping will be removed and replaced with acceptable material. Any malfunctioning electrical or mechanical equipment will be replaced.

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12.0 STORM WATER MANAGEMENT SYSTEM

The storm water management system consists of the following components:

- Storm water conveyance system, including:
 - Gravity drain header pipe
 - Manholes
 - Discharge piping
 - Emergency overflow discharge piping
- Infiltration Basins

12.1 OBSERVATION AND INSPECTION

Observation and inspection of the storm water management system construction will be performed by the CQA Engineer and will include the following:

- Observe installation of the storm water collection system manholes.
- Observe installation of the storm water gravity drain header piping, and discharge piping to infiltration basins. Includes pipe inverts and location information.
- Observe installation of the infiltration basin emergency overflow piping, including pipe inverts and location information.
- Observe and document excavations and backfill of pipe trenches, and manhole excavations, including restoration of any CAMU surface areas disturbed during construction.
- Observe installation/excavation of the infiltration basins.
- Survey pertinent system inverts and elevations.
- Maintain daily field notes and testing records regarding project construction.
- Provide photographic documentation of major construction activities.

12.2 CONSTRUCTION TESTING

In-field testing will be performed to document that installation and materials used are in conformance with the design drawings and specifications. The Earthwork Contractor is responsible for selecting materials and components that meet project requirements. The Earthwork Contractor will submit manufacturers' information regarding selected materials

for approval prior to installation. Specific testing and sampling activities for the Storm Water Management System are discussed below. In field and laboratory testing will be performed at the frequency shown in Table 1 of this CQAP.

12.2.1 Manholes

The storm water management system manholes (SM01 through SM07) are constructed of pre-cast concrete. Construction will be documented by the CQA Engineer. Refer to Drawings D23 and D24 of the COLDR for manhole details.

12.2.2 Conveyance Piping

The buried conveyance pipe systems including the header pipes (18 to 24-in. diameter PE), discharge pipes (24 and 30-in. diameter concrete), and emergency overflow pipes (24-in. diameter corrugated metal pipe (CMP)) will be installed by the Earthwork Contractor. All underground piping associated with the storm water management system will drain by gravity. Construction will be documented by the CQA Engineer. Refer to Drawings D10 and D23 and D24 of the COLDR for the header pipe locations and details, discharge pipe locations and details, and emergency overflow pipe locations and details. The location and elevations of the pipe systems, including inverts and junctions will be located by survey.

12.2.3 Infiltration Basins

The infiltration basins will be excavated to grades indicated on Drawing D7 of the COLDR. Construction will be documented by the CQA Engineer. Grades will be verified by survey.

12.3 FAILING TESTS OR MATERIALS

Any unacceptable materials will be replaced.

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13.0 INSPECTION ACTIVITIES

13.1 PRECONSTRUCTION MEETING

A preconstruction meeting will be held at the CAMU site prior to beginning construction. The preconstruction meeting must be attended by the representatives of the CAMU Owner, the Engineer, the Earthwork Contractor, the Geosynthetic Contractor, the CQA Engineer, IDEM, and USEPA. This CQAP will be reviewed and the responsibility of each party will be reviewed and clearly understood. The meeting will be documented by the CQA Engineer and minutes will be transmitted to all participants.

13.2 PREFINAL INSPECTION

As the project is nearing completion, a prefinal inspection meeting will be held at the CAMU site. The prefinal inspection will be attended by the representatives of the CAMU Owner, the Engineer, the Earthwork Contractor, the Geosynthetic Contractor, the CQA Engineer, IDEM, and USEPA. The prefinal inspection will consist of a walk-through inspection of the entire CAMU site. The prefinal inspection will determine whether the project is being completed consistent with the contract documents. Any outstanding construction items noted during the prefinal inspection will be recorded. A prefinal inspection report will outline the outstanding construction items, actions required to resolve items, completion dates for these items, and the date for the final inspection.

13.3 FINAL INSPECTION

Upon completion of any outstanding construction items, a final inspection meeting will be held at the CAMU site. The final inspection must be attended by the representatives of the CAMU Owner, the Engineer, the CQA Engineer, IDEM, and USEPA. The final inspection will consist of a walk-through inspection of the project site. The prefinal inspection report will be used as a checklist and will focus on the outstanding construction items.

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14.0 DOCUMENTATION

Construction of the dewatering system (including the vertical barrier wall), site security (fence), CAMU excavation and berms, on-site roads, CAMU liner (and associated protection), leak detection/leachate collection systems, and storm water management system will be documented in accordance with the plans and specifications and this CQAP. The CQA Engineer must document that requirements of this CQAP have been addressed and satisfied.

The CQA Engineer must provide signed daily field reports, data sheets, and checklists to verify that monitoring activities have been carried out. The CQA Engineer must maintain at the job site a complete file of all documents that comprise or support this CQAP, including plans and specifications, checklists, test procedures, daily logs, and other pertinent documents.

Original documents will be stored by the CQA Engineer.

14.1 DAILY REPORTS

Daily field reports will be prepared by the CQA Engineer to document the activities performed on site. Daily field reports must include:

- Observation and testing data sheets
- Discussions between the representatives of the Contractor, the CQA Engineer, and the CAMU Owner
- Documentation of construction problems and resolutions

14.1.1 Observation and Testing Data Sheets

Observation and testing data sheets will be prepared daily. At a minimum, these data sheets must include the following information:

- An identifying sheet number for cross-referencing and document control.
- Date, project name, location, and other project identification information.
 - Documentation of weather conditions
 - Reduced-scale site plan showing all current work areas and test locations
 - Descriptions and locations of ongoing construction
 - Equipment and personnel in each work area, including subcontractors
 - Descriptions and specific locations of areas, or units, of work being tested and/or observed and documented (identified by lift and location)

- Locations where tests and samples were taken
- Summary of test results
- Calibrations or recalibrations of test equipment, and actions taken as a result of calibration
- Off-site materials received, including quality verification documentation
- Decisions made regarding acceptance of units of work, and/or corrective actions to be taken in instances of substandard quality
- Signature of CQA Engineer

Photographic reporting data sheets, where used, must be cross-referenced with Observation and Testing Data Sheets and/or Construction Problem and Resolution Data Sheets. The photographs will serve as a pictorial record of work progress, problems, and mitigation activities. The basic file will contain color prints. Negatives will be stored in a separate file.

14.1.2 Discussions Between Earthwork Contractor, Geosynthetic Contractor, and CQA Engineer

A memorandum will be prepared each day summarizing discussions between the representative of the CQA Engineer, the Earthwork Contractor and the Geosynthetic Contractor. At a minimum, the memorandum will include the following information:

- Date, project name, location, and other project-related identification
- Name of parties involved in discussion
- Relevant subject matter or issues
- Activities planned
- Constraints and/or suggestions
- Schedule impacts
- Signature of the CQA Engineer

14.1.3 Construction Problems and Resolutions

Sheets describing special construction situations will be cross-referenced with specific Observation and Testing Data Sheets, and must include the following information:

- An identifying sheet number for cross-referencing and document control
- A detailed description of the situation or deficiency

- The location and probable cause of the situation or deficiency
- How and when the situation or deficiency was found or located
- Documentation of the response to the situation or deficiency
- Final results of any response
- Any measures taken to prevent a similar situation from occurring in the future
- Signature of the CQA Engineer

The Engineer must be made aware of any significant reoccurring activities that do not conform with the design and specifications.

14.2 FIELD TESTING REPORTS

Records of field and laboratory testing performed on components of the dewatering system (including the vertical barrier wall), site fence, CAMU excavation and berms, on-site roads, CAMU liner (and associated protection), leak detection/leachate collection systems, and storm water management system must be collated by the CQA Engineer. A summary list of test results will be prepared by the CQA Engineer on a continual basis.

14.3 PROGRESS REPORTS

The CAMU Owner must submit signed monthly progress reports to USEPA during the construction phase. These progress reports must include as a minimum (and as appropriate):

- A description and estimate of the percentage of the CAMU completed
- Summary of findings
- Summary of changes made in the CAMU during the reporting period
- Summaries of contacts with representatives of the local community, public interest groups, or State government during the reporting period
- Summary of problems or potential problems encountered during the reporting period
- Actions being taken to address these problems

- Changes in key personnel during the reporting period
- Projected work for the next reporting period
- Copies of daily reports, inspection reports, and laboratory/monitoring data (if available)
- Comparisons of working schedule to project schedule
- Summaries of conference calls and meetings held during the reporting period between the CAMU Owner and USEPA

14.4 INSPECTION REPORTS

Inspection reports will be completed after each of the required inspections have occurred to document the inspections. Documentation of the inspections will be prepared by the CQA Engineer and will be issued to all participants in the inspection meeting.

14.5 AS-BUILT DRAWINGS

As-built drawings of the dewatering system (including the vertical barrier wall), site fence, CAMU excavation and berms, on-site roads, CAMU liner (and associated protection), leak detection/leachate collection systems, and storm water management system will be prepared by the CQA Engineer and included in the Construction Completion Report. The information will be presented on scale drawings both in plan view and in cross-section. At a minimum, the drawings will include the following:

- Record locations of barrier wall
- Record location of dewatering wells
- Record location and inverts of the dewatering system, leak detection and leachate collection systems.
- Record geomembrane panel layout
- Record grades of the finished surface
- Location of field tests and samples obtained for laboratory testing
- Cross sections
- Plan and Profiles
- Details

14.6 CONSTRUCTION COMPLETION REPORT

Following the final inspection, a Construction Completion Report will be prepared by the CQA Engineer and submitted to the CAMU Owner for submittal to USEPA. The Construction Completion Report will confirm that the work has been performed in substantial compliance with the design plans and specifications. The Construction Completion Report will include the following:

- Summary of construction activities
- Observation and Testing Data Sheets, including sampling locations
- Construction problems and solutions
- Photographic documentation
- Changes from design and material specifications

14.7 FINAL STORAGE OF RECORDS

Final records of the construction of the CAMU will be maintained in the CQA Engineer's files. Copies of reports and other submittals will be retained by the CAMU Owner and USEPA.

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TABLES

TABLE 1

**Construction Documentation Tests and Frequency
CAMU**

<u>Test Type</u>	<u>Test Frequency</u>
EXCAVATION / SITE PREPARATION	
Subbase Fill / Base-Grade Preparation <ul style="list-style-type: none"> Survey-Base Grade 	100-ft grid (Inc high/low pts)
Berms/Other General Fill <ul style="list-style-type: none"> Field Dry Density and Moisture Content (nuclear meter and/or sand cone method) Moisture-Density Relationship Survey-Grade and Thickness GCL-Bentonite Mass/area 	Every 100-lf/ft thickness Every 5,000 cy 100-ft grid Every 100,000 sf
BARRIER WALL SYSTEM	
Trench Excavation <ul style="list-style-type: none"> Measure Depth Measure Length 	Every 10 lf Daily
Key-In Material <ul style="list-style-type: none"> Visual Classification Natural Moisture Atterberg Limits Grain-Size Distribution (sieve and hydrometer) 	Every 10 lf Every 250 lf Every 250 lf Every 250 lf
Slurry <ul style="list-style-type: none"> Marsh Funnel (at holding area and trench bottom) Filtrate Loss (at holding area) pH (at holding area) Density (unit wt; at holding area and trench bottom) Sand content of slurry at holding pond Sand content of slurry at bottom of trench Depth to slurry below working bench surface (2 ft or less) 	2 / day 2 / day 2 / day 2 / day 2 / day 2 / day Intermittent
Soil-Bentonite Backfill Material <ul style="list-style-type: none"> Slump Density (unit weight) Grain-Size Distribution (sieve and hydrometer) Permeability Excavation Toe Location (Station) and depth Trench Backfill Location (Station) and depth 	2 / day 2 / day Every 250 lf Every 500 lf 20 ft intervals (beginning and end of day) 20 ft intervals (beginning and end of day)
DEWATERING SYSTEM	
Conveyance Piping <ul style="list-style-type: none"> Pressure Test Survey 	All Every 100 lf, Inv Elevations, Corners, bends, etc.
Dewatering Wells <ul style="list-style-type: none"> Survey 	TOC Elevations
Manholes <ul style="list-style-type: none"> Survey Field Dry Density and Moisture Content Subbase/Bedding/Backfill (nuclear meter) 	Elevations 2/ft thickness

TABLE 1

<u>Test Type</u>	<u>Test Frequency</u>
Pipe Bedding Material <ul style="list-style-type: none"> Grain-Size Distribution (sieve and hydrometer) 	Every 500 lf
Trench Backfill <ul style="list-style-type: none"> Field dry density and moisture content (nuclear meter) Moisture-Density Relationship 	Every 100 lf per 1 ft thickness Every 1,000 cy
ROAD CONSTRUCTION	
Base Course and Surface Course <ul style="list-style-type: none"> Field Dry Density and Moisture Content (nuclear meter) Moisture-Density Relationship Grain-Size Distribution (sieve) Survey Subbase, base, and final grades 	Every 100 lf Every 5,000 cy Every 5,000 cy Every 100-lf
LEACHATE COLLECTION SYSTEM / LEAK DETECTION SYSTEM	
Pipe Bedding Material <ul style="list-style-type: none"> Grain-Size Distribution (sieve) 	Every 500 lf
Conveyance Piping <ul style="list-style-type: none"> Pressure Test Survey 	All Every 100 lf, Inv Elevations, Corners, bends, etc.
Collection Piping <ul style="list-style-type: none"> Survey 	Every 100 lf, Inv Elevations, Corners, bends, etc.
Trench Backfill <ul style="list-style-type: none"> Grain Size Distribution 	Every 100 lf per 1 ft thickness
Granular Drainage Layer (Leachate Collection System Only) <ul style="list-style-type: none"> Grain-Size Distribution (sieve) Hydraulic Conductivity Survey 	Every 5,000 cy Every 5,000 cy 100-ft grid (Inc. high/low pts)
Leachate Collection Sumps <ul style="list-style-type: none"> 24-hour leak detection test Survey 	All All
Manholes (Collection and Conveyance) <ul style="list-style-type: none"> Survey 	All inverts
LINER SYSTEM	
Geomembrane <ul style="list-style-type: none"> Thickness Specific gravity Melt index Tensile properties Environmental stress crack resistance Seam peel & shear Non destructive seam test Interface Friction (with material below) Interface Friction (with material above) Trial Seam Testing 	Each Roll Every 100,000 sf Every 100,000 sf Every 100,000 sf Each Resin Batch Every 500 ft of seam Every Seam 1 1 Start of seaming and every 4 hours

TABLE 1

<u>Test Type</u>	<u>Test Frequency</u>
Geonet composite	
• Geonet/Geotextile properties	Minimum of 1 per lot or Every 100,000 sf
• Transmissivity ^(a)	2
• Interface Friction (with material below)	1
• Interface Friction (with material above)	1
• Interface Friction (with material above)	1
Geosynthetic Clay Liner	
• Bentonite mass/area	Every 100,000 sf
• Tensile Strength	Every 100,000 sf
• Peel Strength	Every 100,000 sf
• Interface Friction (with material below)	1
• Interface Friction (with material above)	1
Geotextile	
• Mass/Unit Area	Every 250,000 sf
• Grab Strength	Every 250,000 sf
• Elongation	Every 250,000 sf
• Trapezoidal Tear	Every 250,000 sf
• Puncture Strength	Every 250,000 sf
• Burst Strength	Every 250,000 sf
Anchor Trench	
• Field Dry Density and Moisture Content	Every 100 lf per 1 ft thickness
• Moisture-Density relationship	Every 1,000 cy
• Survey	Every 500-lf
STORM WATER MANAGEMENT SYSTEM	
Infiltration Basins and Piping	
• Survey	Elevations

FOOTNOTES:

- ^(a) Test to be performed with site specific material at three normal loads and three hydraulic gradients.

